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**FOREIGN
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JPRS Report

Environmental Issues

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Environmental Issues

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14 October 1994

[NOTE TO READERS: Effective 1 October, the processing indicators appearing in brackets at the start of each item will be changed. All new indicators will begin with "FBIS" to make the material more easily identifiable. Some will also indicate whether the item has been translated from the vernacular or transcribed from English.]

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Swedish Experts To Help Russia Destroy Chemical Stockpile

BR2709141694 Sweden SVENSKA DAGBLADET
in Swedish 16 Sep 94 p 7

[Jan Blomgren report: "Chemical Weapons To Be Destroyed"]

[FBIS Translated Text] Russia has the world's largest stockpile of chemical weapons. There are seven large depots containing 40,000 tons, which amounts to one third of the world's total estimated volume of chemical weapons.

Following the breakthrough at the international negotiations in Paris 13-15 January 1993, all chemical weapons will be destroyed. Russia is not going to manage this on its own. Among the first to help are two Swedish experts from the Armed Forces' Research Institute, which also deals with the development of Swedish protection programs against ABC-weaponry (nuclear, biological and chemical weapons). This know-how will now be used for the destruction of chemical weapons in Russia.

Arsenic in Tanks

The Russian depots are mainly located around the Volga River in the Udmurt and Chuvash Republics. Just outside the town of Kambarka in the Udmurt Republic, there is a 6,000 ton stockpile of lewisite (a poison containing arsenic) stored in large steel tanks.

Ake Bovallius and Mats Konberg have recently visited the site and completed a risk analysis. "We have studied the probability of accidents and their consequences. At present, there is no acute danger. Maintenance is in good order and the site is guarded by the military. But the destruction of these weapons will require huge resources," says Mats Konberg.

Russia was one of the 149 nations to sign the treaty of Paris. After the ratification of the treaty by 65 states—only Germany of the greater powers has done this until now—the countries have ten years to get rid of the weapons.

Russia built its first facility for the destruction of chemical weapons in the 1980's. It is located near the city of Chapayevsk, but has until now only been used as a training site. Local protests were in fact of such magnitude that the government did not dare to start up operations at the installation. Instead the Russians have now started to build destruction plants next to the depots in order to avoid dangerous transports.

"Sweden can not contribute to the required economic resources, but we can offer problem solutions concerning

the destruction, environmental protection, and security arrangements until all weapons have been destroyed," says Ake Bovallius.

Big Problems

The Russian problems can be summed up in these three points:

- What technique will be used for the destruction?
- How to deal with the inevitable problems of slag and threats to the environment?
- Contact with the population in the area. It is necessary to give information about what is to come without causing anxiety and panic.

Russia's economy is under hard pressure and substantial investments will be required.

American experts have calculated that the destruction of the 30,000 tons stored in the United States will cost \$8 to 10 billion. The corresponding figure for the Russian stockpiles is \$5 to 6 billion.

A Meaningful Effort

"Despite the enormous economic problems, it is positive that Boris Yeltsin's decree has given priority to the question of the destruction of chemical weapons. To use our know-how in order to help Russia feels meaningful to us. It is also useful to get the opportunity to work on concrete problems," Ake Bovallius concludes.

China, Germany Sign Environment Accord

OW2709043094 Beijing XINHUA in English
0325 GMT 27 Sep 94

[FBIS Transcribed Text] Bonn, September 26 (XINHUA)—The Chinese State Bureau for Environmental Protection and the German Federal Ministry of the Environment signed an agreement on environmental cooperation here today.

Chinese Ambassador to Germany Mei Zhaorong and German Minister for the Environment Klaus Toepfer signed the agreement on behalf of their governments.

According to the agreement, the two sides will cooperate in the following fields: pollution control, environmental policy and management, fuel efficiency, the use of recyclable energy, the enhancement of environmental awareness, the development of pollution-free technology, the effect of government policies on the environment, and actions to be taken following the UN conference on the environment held in 1992 in Rio de Janeiro.

Last November when German Chancellor Helmut Kohl visited China, the two governments signed a joint communique on the environment and development.

The agreement signed today is designed to help implement the joint communique.

**Tokyo To Provide 4.9 Billion Yen Environment
Aid to Hungary**

*OW0310090794 Tokyo KYODO in English
0821 GMT 3 Oct 94*

[FBIS Transcribed Text] Tokyo, Oct. 3 KYODO—Japan will extend a 4.9 billion yen loan to help Hungary resolve its environ

The loan will be used to improve the water main, sewerage and heating systems in Hungary's Varpalota region, which has serious environmental problems, they said.

This is Japan's first development assistance loan to an East European country.

KENYA

NGO's Criticize Government for Allowing Deforestation

EA2309205894 Nairobi KTN Television Network in English 1600 GMT 23 Sep 94

[FBIS Transcribed Excerpt] Ten nongovernmental organizations [NGO's] have protested to the government over the recent degazetting of over 46 acres of Nairobi's Karura forest. The degazetted portion has been allocated to private developers. The Ministry of Environment and Natural Resources degazetted the 46 acres on 19th of last month [August]. Early this year, the government also degazetted 25 acres of the forest. The NGO's sentiments were contained in a press statement. The NGO's said that the move contradicts the government's stated commitment to bio-diversity conservation. The organizations noted that forest area covers less than three per cent of Kenya's land and supports 50 of the nation's plant and animal species and should be protected at all costs, adding that the continued destruction will undermine the country's ecological balance. They urged the government to abide by its recent ratification of the bio-diversity and climate change conventions. [passage omitted: names of organizations that signed the statement]

SOUTH AFRICA

Plans To Resume Elephant Meat, Hide Trade Opposed

MB0110192294 Johannesburg SAPA in English 0052 GMT 1 Oct 94

[FBIS Transcribed Text] Johannesburg Sept 30 SAPA—The European Parliament on Friday [30 September] passed a resolution opposing South Africa's plans to downlist its elephant populations from Appendix I to Appendix II of the Convention on International Trade in Endangered Species (CITES) in November.

Downlisting the elephant population would mean immediate international trade in meat and hides with the intention of future trading in ivory. The resolution said a resumed international trade in elephant hides and meat would threaten African elephants, the Environmental Investigation Agency [EIA] said in a statement.

The resolution, which follows a meeting of 11 African nations two weeks ago when it was decided to maintain existing elephant numbers, said South Africa had failed to meet the criteria laid down in 1989 for downlisting any African elephant population.

"We should be...finding ways of ensuring that the massive economic potential of live elephants is channelled into forward-looking projects for rural development and conservation. Now is not the time to be trying to reverse a worldwide trend," EIA spokesman Susie Watts said. She said the sale of dead elephants could send the wrong signals and invite renewed poaching.

Awareness of Urban Pollution Grows*HK0410072994 Hong Kong EASTERN EXPRESS
in English 4 Oct 94 p 5*

[By Susie Weldon]

[FBIS Transcribed Text] China's enthusiastic participation in next month's conference on urban pollution, to be held in Beijing, is a sign of its growing awareness of the problem, the organisers said yesterday. As well as drawing some of the world's leading environmentalists, the conference, Polmet, will be attended by delegates from all over China, the Secretary for Works, James Blake, said.

Blake said Beijing had asked four years ago if it could jointly organise the conference with the Hong Kong Institute of Engineers. "Beijing recognises the problems they face in health in metropolitan environments and so the prospect of an international conference on their doorstep ... is an extremely exciting opportunity for them," Blake said. He said this could be seen by the attendance of senior Chinese officials, including the director of the National Environmental Protection Agency, Xie Zhenhua, the head of the Construction Ministry, Hou Jie, and the president of the China Association for Science and Technology, Professor Zhu Guangya.

This is the first time the conference, which has been organised every three years since 1985, has been held outside Hong Kong. Blake, who is the co-chairman of the organising committee, would not say if he would use the opportunity while in Beijing to discuss Hong Kong's controversial strategic sewage disposal. China is unhappy about the scheme, which involves a 23-kilometre pipe under the sea to discharge the territory's sewage in mainland waters.

Blake said the subject might be raised in the context of Hong Kong's efforts on water pollution but no formal meetings would be held with Chinese officials. Hanson Huang, a member of the conference organising committee, said Beijing was now very concerned about the problems of waste disposal and water and air pollution. Huang said this concern had been prompted partly by a desire for better living conditions but also because of the enormous economic cost of pollution.

China had especially asked for seminars on how to set policy and draft laws to protect the environment. China is reviewing its environmental laws to identify which were enforceable part of a move towards a "more practicable strategy" in environmental protection, he said. The conference director, Sarah Liao, said the event had helped Hong Kong shape its environmental protection policies, such as regulations on noise pollution and environmental impact assessments. "We have come a long way since 1985 in Hong Kong, despite the fact that there is still a long way to go," she said.

The conference organisers were divided over Hong Kong's biggest pollution problems. But they agreed that

air, water and noise pollution were all pressing problems, although Liao said she did not see how much more could be done to regulate noise in Hong Kong's crowded urban environment.

Institute Reports Progress in Recycling Resources*OW0410074794 Beijing XINHUA in English
0727 GMT 4 Oct 94*

[FBIS Transcribed Text] Tianjin, October 4 (XINHUA)—China has made great progress in the reclamation, utilization, processing and studies of recycled resources in recent years, according to the Tianjin-based Regenerated Resources Research Institute under the Ministry of Internal Trade.

The Chinese Government attaches importance to the use of recoverable resources. The All-China Federation of Supply and Marketing Cooperatives set up a bureau of recycled goods as soon as the People's Republic of China was founded in 1949.

Over the years, China has recovered from recycled resources 4.2 billion tons of ores, 180 million cubic meters of timber, 19 million tons of soda ash, 580 million tons of standard coal, 5.9 million kwh of electricity, 120 million barrels of crude oil, 19.7 billion cubic meters of water and 125 billion yuan-worth of investments in mines.

Over the past forty years or more, the discharge of residue has been reduced by 20 to 30 percent, that of waste water by 30 to 40 percent, that of city garbage by 20 to 30 percent, and that of poisonous gas by 20 to 30 percent.

The reclamation of recycled resources has yielded good returns in industrial departments.

Since 1979, for example, the Anshan Iron and Steel Corporation in Liaoning Province has invested more than 700 million yuan in 59 comprehensive projects, which have an hourly treatment capacity of 2.22 million cubic meters of waste gas, 10,000 tons of waste water and 240 kg of residue at present.

Each year, the corporation recovers 140,000 tons of iron powder, 2,000 tons of coking powder, 85,000 tons of waste iron and steel and 17.9 million cubic meters of recycled water.

As a way to further develop the recycling industry, China has put the establishment of an information system and a trade market of recycled goods on the top of its development agenda for the next century.

At present, China is leading the world in recycling used plastic, processing and refining petrol, diesel and combustible gas, recycling used rubber and refining rare metals, according to experts.

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UN Ozone Trust Offers Donation for Development in Tianjin

OW0410080594 Beijing XINHUA in English
0500 GMT 4 Oct 94

[FBIS Transcribed Text] Tianjin, October 4 (XINHUA)—The United Nations ozone trust fund has offered the Tianjin No.1 daily-use chemicals plant a donation of 2.77 million U.S. dollars, according to sources.

The donation represents the largest sum in the fund's first batch of donations for the Chinese Government, which totals 7.34 million U.S. dollars.

The donation will be used in a transformation project of the plant, which is designed to cut the amount of substances detrimental to the ozone layer by 6,300 tons a year.

An agreement was signed here on Monday between the Tianjin branch of the Investment Bank of China and the Tianjin Daily-Use Chemicals Plant on receiving the UN donation.

Shanxi Province Uses Foreign Funds To Improve Ecology

OW0110032594 Beijing XINHUA in English
0244 GMT 1 Oct 94

[FBIS Transcribed Text] Taiyuan, October 1 (XINHUA)—North China's Shanxi Province has used a fund of 50 million U.S. dollars from world financial institutions to improve its ecological environment over the past few years.

According to local agricultural officials, the construction of a water control project and other 3,923 projects for tackling soil erosion in the northwest of the province, which were financed with loans from the World Bank, is now in full swing.

Known as one of the less developed provinces in the country, Shanxi has suffered from severe soil erosion due to its bad ecological environment.

The total investment in the water conservancy projects in the loess plateau totaled 540 million yuan, including 38.8 million U.S. dollars from the World Bank. The projects went into effect in September this year and will be completed in a period of eight years.

The 3,923 projects in the Luliang mountainous region of northwest Shanxi cover an area of 1,846 square kilometers, including Linxian, Lishi and Zhongyang counties. When completed, they will benefit a total 248,000 local farmers.

The joint United UN/FAO [Food and Agricultural Organization] World Food Program rendered a free aid of 12.238 million U.S. dollar worth of wheat. And the local

government also channeled 58 million yuan into the projects which are expected to go into operation in September, 1997.

Ningxia Secretary on Transformation of Nature

HK0310124094 Beijing GUANGMING RIBAO
in Chinese 17 Aug 94 p 3

[Article by Huang Huang (7806 3874), secretary of Ningxia Hui Nationality Autonomous Regional Party Committee: "Set Right Man's Position in Nature, Be More Courageous To Take Up Great Responsibility for Transforming Nature"]

[FBIS Translated Text] Man and nature—which involves all men, all places concerning men's activities, and all spheres concerning men—are an abstract, but very concrete and important subject. A conscientious study of the problems in this field—so as to scientifically bring to light the laws governing the evolution of nature, as well as a correct understanding of the relationship between man and nature, and so as to set right man's position in nature—will help people enhance their confidence and courage in the struggle against natural disasters, and to shoulder the great historical mission of transforming, using, and protecting nature more successfully, so they can make greater contributions to mankind.

Endeavor To Acquire a New Understanding of Nature

Nature is the cradle of mankind. Men began to recognize nature immediately after they were born. With the development of human society, this recognition has been deepened step by step. Although it has been deepened to a considerable degree now, it has not come to an end, and there never will be an end. We must make ceaseless exploration on the basis of our past achievements so we can become more familiar with, and master the laws governing the development and changes of nature, and so that we can go on discovering, inventing, creating, and advancing.

First, all natural phenomena are recognizable. The history of mankind is itself a history of contacts between man and nature. Man came from nature, but transcends it, and is a higher species of creature with the ability to think. This is a fundamental factor for man to recognize nature. Although nature is mysterious and sometime like a maze, there are laws governing the existence and motion of all matters of nature. Provided we make efforts to explore, we can surely find the route through the maze. Comrade Qian Xuesen said that everything can be recognized. There are only things that have not yet been recognized, and nothing is unrecognizable. This is absolutely true.

In the long years of history, in order to explore relations between man and nature and the true essence of nature, mankind has depicted, explained, and forecast nature through various forms and in diverse ways. There have been various schools of thought, and all kinds of theories

and explanations on nature, and some are sharply antagonistic. Basically, however, there are two major theories: Idealism and materialism. Looking at nature with an idealistic viewpoint, people may regard nature as an outcome of man's concept and think that man can do anything he pleases, or they may regard mankind as the slave of nature and allow themselves to be ordered about by nature. However, dialectical materialism believes that all things in nature are objective realities and that practice is the basic source of recognition. Through the endless circulation characterized by practice—recognition—practice again—recognition again, man's recognition of nature is continuously pushed to a new higher level.

Man can recognize nature. This is also because man can continuously master and develop science and technology, and can recognize nature by scientific means. The Roman Pope explained that the earth was a gift from God, but the astronomer Copernicus established his "heliocentric theory" through scientific experiments, proving that the earth is a planet of the solar system. As for the origin of life, European theology fabricated the myth of Adam and Eve, but Darwin established his theory of evolution after making conscientious observations and profound studies, in which he expounded that all plants and animals—including the human species—were the outcome of development over millions of years. Morgan discovered genes and gave further explanations of life, laying a foundation for the science of genetics. In modern genetic engineering, people are studying how to create new species by means of synthesis. Certain breakthroughs already have been made in some important spheres. This is how mankind has recognized nature: Relying on science and technology to achieve the initiative, step by step. Now mankind is able to explain many complicated natural phenomena.

Second, it is necessary to see through appearances to get at the essence of nature. Only recognition in essence is scientific recognition. Only by seeing through appearances to get at the essence, and by seeing through natural phenomena from outside to inside and from various aspects can we see clearly their true features, gain an overall and profound understanding of nature, correctly master the laws of nature, and more effectively use and transform nature. To this end, we must grasp the following two points:

1. To grasp the whole. The whole makes decisions for the parts, and the parts should obey the whole. In the relations between man and various natural resources—including living things, climate, rainfall, land, and mineral resources—there are relations of interconnection and mutual condition, which form a complicated system. No matter what we are doing, as long as we proceed from the interests of the whole, carry out scientific planning, and implement it in a reasonable way, we surely will achieve very good results. This is also the same in exploiting, using, and protecting natural resources. We must take various factors into consideration, and endeavor to achieve economic, social, and ecological benefits simultaneously.

2. To grasp the main points. Nature refers in general to the entire universe we have already recognized. It is a concept with extensive meaning. In order to recognize nature, we must seek specialty from universality, pay great attention to the key links, and grasp major contradictions. China is a very special country. It is feeding 22 percent of the world's population with less than 7 percent of its cultivated land. Moreover, it has developed all kinds of construction undertakings, and created miracles again and again. We must regard the world around us as the focus of our recognition. All leaders should proceed from their local realities and make themselves familiar with the surrounding environment. They must study the things around themselves, and focus on the optimization and development of major projects.

Third, it is necessary to adopt a developing and dynamic viewpoint in recognizing nature. Nature is a material world, full of contradictions, and is moving continuously. Something that happens in the east of a river for 30 years may also happen in the west of it for another 30 years. Seas can be changed into cultivated land, and a continent can be changed into a sea. Various natural phenomena will not appear repeatedly in a fixed form. Man's position and role in nature are also developing in a dynamic manner forever. Mankind is recognizing and remolding himself the course of recognizing and remolding nature, and is moving uninterruptedly amid contradictions. Mankind's ability to recognize and make use of nature give expression to the degree of civilization of human society, and it affects the development of the world. Mankind's level of recognition, utilization, and transformation of nature determines the degree of development of his society and the political, economic, cultural, and science and technological affairs of all countries. If mankind is afraid of the power of nature and unable to do anything for nature, or if he ignores natural laws and does things blindly, with a viewpoint that regards spiritual factors as omnipotent, the contradictions between man and nature will be aggravated, which will finally result in nature's retaliation against mankind.

Marxism believes that there will never be a "terminus" or a limit for man's recognition and utilization of nature. No matter how science and technology develop, there always will be new subjects to study and resolve. Continuing to develop and to advance is the basic guiding principle for us in recognizing, remolding, and using nature. Now the shortage of resources and the crisis of rapid population growth have drawn people's great attention to the conditions for subsistence. On this question, we must use a viewpoint of development to understand. Nature has no bias against anyone. It is dedicated to mankind indefinitely and endlessly. Provided people make bold explorations, struggle hard, and protect natural resources while exploiting them, the resources will be inexhaustible. Take biological resources, for example. There are tens of millions of living beings in the world. Plants alone include more than 350,000 varieties, including more than 80,000 edible plants. However, only

3,000 or so of them, or 2.7 percent, have been exploited and used. From this we can see that there is still great potential in this field. Regarding the number of people all the natural resources on Earth can support, there are all kinds of estimates. The lowest is 13 to 15 billion. U.S. scientist (Roger Revill) believed that if all the cultivated lands on earth were used with proper farming techniques, grain for 100 billion people could be obtained. No matter what method is adopted to make such estimates, the following two points are relatively clear: First, it is a global phenomenon that the degree of exploiting and using natural resources is still rather low, and this is particularly the case in our country. Second, it is necessary to exercise control over the excessively rapid population growth, and to pay equal attention to material and population production. Therefore, we must take an optimistic attitude in estimating natural resources, and should not lose our confidence in the future.

Actively Mold a New Image of Remolding and Using Nature

The relationship between man and nature is decided by the development of productive forces. It can be divided into three major historical stages. In each of these stages, there were conflicts between bravery and cowardice, struggles between progress and retreat, and contests of strength between science and ignorance. Such conflicts, struggles, and contests of strength then promoted economic development, propelled social progress, and molded the image of mankind.

The first stage was one of dependence and obedience. In primitive society, owing to the extremely low level of productive forces, mankind's understanding and recognition of nature was still in a state of barbarism. Having very limited ability to resist natural calamities, people feared, then worshipped nature. They were basically the slaves of nature. The second stage was one of remolding and using nature. After mankind entered an agricultural society, he realized his first leap in the understanding and recognition of nature, and gradually started his activity of remolding and using nature. This was a display of man's strength, which was reflected in the following aspects: First, constantly improved production tools replaced parts of the labor done by hands and feet. Second, the constantly improved production and living conditions made nature more suitable for man's subsistence. Third, the continuous development of mankind itself resulted in the increase of man's intellectual level. The organic combination of the three enabled man to change from his position as a slave of nature to a position as the master of nature. With the arrival of an industrial society, mankind's ability to understand, recognize, remold, and use nature entered an entirely new sphere. In this stage, the roles of science and technology should not be underestimated. They became the main means and weapons for resolving the contradictions between man and nature, and for protecting the subsistence and development of mankind.

The third stage was one of harmonious development. To get more from nature, it is necessary to attach great importance to harmonizing the relations between man and nature, and to pay great attention to the ecological balance between man and nature. Thus, it is necessary to acquire a better understanding of nature, and to achieve new breakthroughs in science and technology. Mankind now is advancing bravely toward this orientation. Genetic engineering research has pushed biotechnology toward a new peak, the progress in meteorological science enables mankind to advance toward the goal of gaining control over nature, the development of intellectual resources will inject the ability to "think" into robots, and the development of the space industry has opened up the road to outer space. We must have faith in these abilities of man and in the great role and development prospects of science and technology, and must not be affected and restricted by all kinds of pessimistic theories and viewpoints, such as the "theory of restrictive development," "the doomsday theory," and the viewpoint that "the world will be full of misfortunes in the future."

The three historical stages in the development of relations between man and nature give a picture of the development of mankind, from being nature's slave to its master. They have portrayed both the primitive and modern images of man, and have put an end to the naive attitude and practices of man toward nature, enabling mankind to become clever and more powerful. At the same time, they show a course of scientific and technological development, from imitation to experience, and from experience to theory. What needs to be pointed out, however, is that this course of development is by no means plain sailing. There have been countless setbacks, and a series of tragedies also has occurred. We always must bear in mind the lessons learned in all these respects.

In order to remold and use nature, both courage, and science and technology are needed. Marx said that before the entrance to science—just as before the entrance to hell—there should be no hesitation at all, for timidity will prove unseemly. He also said: The road of science is by no means smooth. Only those who dare to climb steep cliffs despite hardships can hope to reach the brilliant peak. Bruno, a Western philosopher and scientist during the Renaissance, was a good example of safeguarding science with his life. There is abundant wealth in nature, waiting for mankind to exploit it. Engels said: "We cannot wait for nature's gift. It is our task to try to get something from nature." If we have gained a profound understanding of this question and handle it well, our economy will be prosperous, our state will be powerful, and our people will be rich.

The Chinese nation is a great nation. On the vast land of China, there are rich natural resources. In the course of remolding and using nature, our ancestors gave play to their courage and wisdom, and they achieved remarkable successes. Many of their achievements are outstanding

in human civilization, such as the flood control projects developed by Emperor Dayu, the weir on the Dujiang, the Grand Canal, and the four great inventions. For various reasons, however, the gap between China and the developed countries has widened since the Opium War. We must face up to reality and recognize the gap. While recognizing our backwardness, we should not be willing to lag behind. We should, with our firm conviction, look into the future and have the whole world in mind. We should exploit nature more courageously, and remold the glorious figure of the Chinese nation.

Master the New Measures for Exploiting Nature in a Correct Way

In the relations between man and nature, man is the motive force. Man is the leading part of nature, and the most energetic, active, and crucial element in the productive forces. All the efforts to recognize, exploit, remold, and protect nature depend on man. Human beings rely first on their physical strength, and second on their intelligence to win successes in exploiting nature. The more progressive is the society, and the more developed are science and technology, the greater the role of intelligence is displayed. For this reason, science and technology have become important propelling forces in speeding up the building of both material and spiritual civilization. In every significant breakthrough made throughout history, science and technology were the main forces pushing economic and social development into a new stage. In the 1760's, the popular application of Newton's mechanical principles in social production and the invention of textile machinery, the steam engine, the steamboat, and the railway train resulted in the rapid development of the textile, metallurgical, and machinery processing industries, as well as the communication and transportation industries, thus enabling human history to enter the "steam era." In the 1870's, owing to the effect of electromagnetism on social production and the emergence of electrical machinery, human history entered an "electric era," and another great leap appeared in social production. Since the 1950's, as a result of the development of nuclear physics and electronic science, atomic energy and computers have been widely used in various spheres, pushing human history into a "high science and technology era," which is mainly represented by the microelectronics technology, bioengineering, new materials, ocean development, and space technology. Facing this new technological revolution, we must make correct policy decisions, and make full use of modern science and technology to improve man's position in nature. We must make continuous efforts to optimize the combination pattern between man and nature, and to increase economic returns, create more wealth, and seek development with the help of science and technology.

In order to more effectively exploit nature with the help of science and technology, we must firmly and resolutely carry out the development strategy of "building up our country with science and technology." Japan was the

first country to put forward the slogan "Building up the country with science and technology." As a kind of development strategy, it is universally applicable. As early as mid-1800's, in his systematic research on the capitalist productive mode, Marx already had made a careful study of the history and status quo of the development of science and technology, and drew the conclusion that science and technology are productive forces. Over the past more than 100 years, science and technology have achieved unprecedentedly great development, and have played increasing roles in promoting economic and social development. In some developed countries, the rate of economic growth promoted by science and technology has increased sharply, from 5-20 percent at the beginning of this century to about 80 percent currently. Capital and labor are no longer the decisive factors for economic growth. Having a keen insight into this general historical trend, Comrade Deng Xiaoping put forward his scientific theory on science and technology being the primary productive force, thereby enriching and developing Marxist theory on productive forces. China is a developing country, and is now in a crucial period of rejuvenating the nation. Only by attaching greater importance to science and technology, developing science and technology, and accelerating the pace of science and technological progress, can we narrow the gap between China and the developed countries, and can China catch up with or even surpass the developed countries.

In order to more effectively exploit nature with the help of science and technology, it is necessary to speed up the pace in reforming the scientific and technological structure. China's scientific and technological structure was established under its specific historical conditions. The main defect of this structure is that scientific research is separated from production, which is detrimental to gearing scientific and technological work to the needs of economic construction, to rapidly popularizing the achievements of scientific and technological research, and to giving play to the enthusiasm of scientific research institutions and personnel. Since the promulgation of the "Decision of the CPC Central Committee on Reforming the Scientific and Technological Structure" in 1985, this situation has improved somewhat, but judging from the requirements for developing a socialist market economy, there are still many things to improve. It is necessary to accelerate reform and to establish a new structure as soon as possible so as further emancipate and develop the primary productive forces. To accelerate the reform of the scientific and technological structure, it is necessary to mobilize the enthusiasm of scientific and technological personnel, and to enhance the vitality of scientific and technological institutions. China has a great army of more than 17 million scientific and technological personnel, more than 5,000 research offices, and more than 8,000 technological development institutions. This is a great force. It is the precious wealth of our country which we should treasure and encourage, so as to give it full scope to play its role in various fields.

In order to more effectively exploit nature with the help of science and technology, it is necessary to accelerate the pace of popularizing the achievements of scientific and technological research. Generally speaking, China's scientific and technological work can be divided into three levels:

The first is basic research, which is the source of scientific and technological development;

The second is high science and high technology research, which is aimed mainly at keeping up with the world's advanced level;

The third is popularizing and applying the new achievements of scientific and technological research.

The three are interrelated, and should be strengthened. In particular, we should attach greater importance to the popularization and application of new achievements of scientific and technological research. A host of facts show that speed in applying the achievements of scientific and technological research is an important symbol of scientific and technological progress. Propelled by scientific and technological progress, the cycle of product renewal will be shortened. The gap between China and the developed countries in science and technology is expressed mainly in the pace at which the achievements of scientific and technological research are turned into productive forces. To improve this situation, we must speed up structural readjustment in agriculture, speed up technological transformation in industry, and make great efforts to develop new products. Science and technology are the common wealth of mankind. We must be good at absorbing and taking as our reference the advanced things of various countries. This is an expression that shows whether a nation is promising and whether it has a bright future. In the sphere of science and technology, apart from relying on its own efforts and making bold creations, China also must be good at absorbing and taking as reference all advanced achievements in the world, so that it can build socialism with its characteristics faster and better.

In order to more effectively exploit nature with the help of science and technology, it is necessary to increase the whole nation's scientific, technological, and cultural quality. Lenin said that it is impossible to build socialism in a country full of illiteracy. In the same way, it is impossible to achieve modernization in a country full of scientific illiteracy. The core of modernization is the modernization of man. In order to enhance man's ability to recognize, use, remold, and protect nature, it is necessary to vigorously develop science and technology, as well as educational and cultural undertakings; strengthen people's scientific and technological conscience; and increase their degree of civilization. This is especially important for leading cadres. Comrade Jiang Zemin has emphasized repeatedly that leading cadres at all levels must work hard to study and master modern science and technology. This is a demand of great strategic significance. At present, most leading comrades

in the cadre ranks have comparatively good cultural knowledge, but this does not mean that they are all good in modern science and technology. Facing the heavy tasks of reform and development, only when the whole party is armed with Comrade Deng Xiaoping's theory of building socialism with Chinese characteristics, and when the cadres at all levels are armed with modern science and technology, and with socialist market economy theory can we ensure the smooth development and success of various undertakings.

Economic development and social progress are not decided entirely by natural conditions. The impact of nature forms only one aspect of things. The impact of the human being cannot be underestimated. All people are living in human society, representing social relations as a whole. All phenomena in human society are closely related with human beings. Therefore, the development of human resources is another important subject for study in our times. We must probe this subject from various angles. Mankind now is advancing toward the most creative years in history. Although there are complicated contradictions and thorny problems, which are hard to resolve for the time being, in general, the future is bright. We must be full of confidence in our future, keep forging ahead in an active manner, and work hard to create a bright future.

Afforestation Efforts Pay Off in Guangxi Province

OW0310143794 Beijing XINHUA in English
1357 GMT 3 Oct 94

[FBIS Transcribed Text] Nanning, October 3 (XINHUA)—South China's Guangxi Zhuang Autonomous Region has made new progress in forestry development, according to a recent regional afforestation conference.

A survey shows that 44 counties of the autonomous region have reached the regional afforestation standards for clearing off waste land and barren hills, thus making Guangxi a step closer to the goal of greening the whole region with trees in 15 years which was set in 1987, the conference was told.

In its afforestation bid, the region has planted trees to over 64.56 million mu (about 4.3 million hectares) of previously desolate lands and barren hills, and allocated 35 million mu of mountainous land for tree nursing since 1987, which account for the total amount done in the previous 30 years before 1987.

By 1991, the autonomous region, one of the underdeveloped in China, had managed to eliminate its long-standing forestry "deficit" when the growth of forest resources surpassed that of consumption. In the three consecutive years since then, Guangxi was credited by the Ministry of Forestry as "a region with excellent results in afforestation."

At present, the afforestation areas of the the autonomous region stand at more than 160 million mu, as compared with 78.4 million mu in 1987, the total forestry reserve

has reached 262 million cubic meters, as against 241 million cubic meters, and the tree coverage rate has been raised to 34.19 percent from 22 percent.

"The progress made in afforestation has been of great help to the region's economic development and to the betterment of the living conditions of the people, especially those in mountain areas", a local afforestation official said.

Report Claims Urban Environment Improves Nationwide

OW2809120594 Beijing XINHUA in English
1139 GMT 28 Sep 94

[FBIS Transcribed Text] Beijing, September 28 (XINHUA)—Suzhou in east China's Jiangsu Province topped the nation in a 1993 urban environment check-up that involved 37 major cities throughout China, according to an official report released today here.

The city scored 81.12 points in the check-up that covered the environmental quality, control of industrial pollution and construction of urban infrastructure facilities. The second to the fifth were Tianjin, Dalian, Haikou and Hangzhou.

Beijing, the national capital, stood the seventh and Shanghai, China's largest economic center, the 13th. At the bottom of the list was Huhhot, capital of Inner Mongolia Autonomous Region, which had only 46.9 points.

Nevertheless, said the bureau in the report, 27 of the cities snatched more points than in the 1992 check-up, and there was improvement in major environmental index for all the 37 cities.

In 1993, the average amount of suspended particles in the air, calculated on a per cubic meter basis, remained the same as in 1992, while the amount of sulphide dioxide dropped from 0.116 mg [milligrams] per cubic meter to 0.101 mg.

In 1993, the urban noise in the 37 cities averaged 57.83 db. [decibel], down from 58.037 db. in 1992. Factories discharged an average of 70.16 tons of industrial sewage for yielding every 10,000 yuan in output value, while the figure was 86.19 tons for 1992.

In 1993, 68.54 percent of the families in these cities were using gas for cooking, compared with 67 percent a year ago. Some 26.73 percent of the urban areas in these cities were greened in 1993, up from 26.31 in 1992.

"The environmental situation in these 37 cities were stable despite the economic and population growth," said the report.

The report added that many cities increased their spending on environmental protection. Such spending for Shanghai amounted to 3.2 billion yuan, of which 1.6

billion was used to build a project to treat the industrial sewage that used to empty into the Suzhou river.

The river runs through the city, and it is now cleaner. Another example is Haikou, capital of Hainan Province, which spent 421 million yuan on environmental protection, 163 percent more than in 1992.

The bureau is now revising the environmental norms and standards for Chinese cities. Meanwhile, it is working on a set of methods to place protection work under public supervision, the report said.

Li Ruihuan Urges World Efforts in Environmental Protection

OW2309210594 Beijing XINHUA Domestic Service
in Chinese 1446 GMT 22 Sep 94

[Report by Zhang Rongdian (1728 2837 0368)]

[FBIS Translated Text] Beijing, 22 Sep (XINHUA)—While meeting with foreign and some Chinese delegates attending the third session of the China Council for International Cooperation on Environment and Development (CCICED) in Beijing this afternoon, Li Ruihuan, chairman of the National Committee of the Chinese People's Political Consultative Conference, said China is willing to work together with other countries and make contributions to global environmental protection.

During the meeting, Mrs Huguette Labelle, vice-chairwoman of the CCICED and president of the Canadian International Development Agency, spoke highly of China's efforts in environmental protection and the great role it has played in global environmental protection. She said: The environment and development complement each other. China's efforts in environmental protection will be beneficial not only to China's own development, but also to world development. Labelle said that delegates have put forward many suggestions at the session, and the most important one is to enhance the people's sense of environmental protection through publicity and education.

Other foreign delegates also voiced their views on China's environmental protection problems at the meeting.

Li Ruihuan expressed his gratitude to friends who contributed their ideas to China's environment and development. He said: In recent years, China made great progress and accumulated rich experiences in environmental protection. Of course, we encountered many problems and difficulties in environmental protection in the course of rapid development. In view of these problems and difficulties, we must spread knowledge of environmental protection and educate the people. We must teach the masses of cadres and people to attach great importance to environmental protection and enhance their awareness of cherishing the earth, the only place where people can survive. We must take economic measures to punish those who pollute the environment. We must strengthen administrative management and use

judicial and administrative measures to severely and resolutely halt pollution in our environment. We must apply advanced science and technology and bring in foreign countries' successful experiences to solve difficult problems we encountered in environmental protection.

Li Ruihuan said: Environmental protection is a common issue faced by the entire human race. It is also an international issue. We must solve environmental protection problems through international cooperation. For the common interests of the whole of mankind, the developed countries should actively spread their advanced technology and experience in environmental protection, and the developing countries should strengthen their efforts in this regard to avoid the mistake of causing pollution first and controlling it later. He pointed out emphatically: The Chinese Government pays close attention to other countries' advanced experience in environmental protection and is willing to carry out international cooperation in this field. It attaches great importance to the consultative role of the CCICED, and will conscientiously consider opinions and suggestions from Chinese and foreign experts.

Song Jian, state councillor and chairman of the CCICED; Qu Geping, chairman of the Environmental and Resource Protection Committee of the National People's Congress; and Xie Zhenhua, director of the State Environmental Protection Bureau, attended the meeting.

The CCICED, which was set up in 1992, is an advisory body on China's environment protection consisting of Chinese and foreign experts. This session opened on 20 September and closed this afternoon.

Jiang Zemin Visits National Forest Products Fair
OW2609183894 Beijing XINHUA in English
1608 GMT 26 Sep 94

[FBIS Transcribed Text] Beijing, September 26 (XINHUA)—Chinese President Jiang Zemin visited a national fair on new and name brand forest products in Beijing this evening.

The president praised the achievements made in forest production, saying that China is rich in forest resources and has a great future in the comprehensive utilization of the resources.

Sponsored by the Ministry of Forestry, the fair is the biggest of its kind ever held in the country.

China's forest area has reached 1.34 million hectares and the forest coverage rate has risen to 13.92 percent, a five percentage points rise from the 8.6 percent in the early period of the founding of New China in 1949.

It boasts an accumulative forest stands of 11.785 billion cubic meters.

CAMBODIA

Khmer Rouge Ministry Denounces Vietnamese Fishermen

BK2409131194 (Clandestine) Radio of the Provisional Government of National Union and National Salvation of Cambodia in Cambodian 1200 GMT 23 Sep 94

["Communique of the Ministry of Rural Areas, Agriculture, and Water of the Provisional Government of National Union and National Salvation" issued on 23 September; place not given]

[FBIS Translated Text] According to widespread reports, increasing numbers of Vietnamese have come to settle everywhere, including along rivers and lakes. These Vietnamese bandits are intensifying their large scale activities to destroy fish in the Tonle Sap lake and other rivers and lakes.

I. The plunder and destruction of fish is something the communist Vietnamese aggressors are doing to destroy and ruin the Cambodian nation and people systematically and enable communist Vietnam to annex Cambodia. Communist Vietnam and the alliance of villains have ordered the two-headed government to continue the war so that the Vietnamese have a chance to flow into Cambodia and take over farmland in eastern Cambodia and in Cambodia's interior; the Tonle Sap, Mekong, and Basak rivers and big and small lakes in Kompong Chhnang, Pursat, Battambang, Siem Reap, Kompong Thom, Kompong Cham, and Prey Veng Provinces; and lakes in Kandal Province's S'ang and Kaoh Thom Districts. The Boeng Prasat Tayo lake has been taken over by the Vietnamese. Even the river junction in front of the Royal Palace in Phnom Penh is full of Vietnamese who reign over the area, both on the water and on the river banks. They are plundering and destroying fish at will. At sea, the Vietnamese are taking over and fishing at will. The Vietnamese fish throughout the year—during the flood season and during the period when fish lay their eggs. They are destroying the inundated forest around Tonle Sap lake, which is a spawning ground for fish.

The Vietnamese use every means of fishing. In particular, they use electric currents provided by batteries carried in boats. Hundreds of boats are involved in this fishing; they line up or form a circle to trap fish in nets or chase fish with an electric current. The Vietnamese bandits have been using these methods for 14-15 years; now they are being used on an even larger scale.

This is the cause of the depletion of fish in our rivers and lakes. Even in Tonle Sap lake—covering tens of hundreds of square meters where all kinds of fish used to be plentiful and renowned the world over—the fish stock has been depleted and destroyed by the Vietnamese. The

Vietnamese who do the fishing are protected by armed forces organized into gangs and groups in Vietnamese boats and villages under the administration of chapters of the Communist Party of Vietnam and Vietnamese troops disguised as civilians.

The Cambodian people, the owners of the land, have lost their rights and cannot fish. Even people looking for fish to produce fish paste and fermented fish have been oppressed and pressured for money and taxes by the Vietnamese bandits and the traitorous state authority. The influx of up to 4 millions Vietnamese into Cambodia to take over and plunder farmland, rivers, lakes, paddy, and fish very seriously affects the people's lives. Peasants are particularly hard hit; they lead a miserable life when deprived of paddy, rice, fish, and meat. Furthermore, they are subject to oppression, plunder, robbery, extortion, and pressure to pay all kinds of taxes and duties from both the two-headed government's traitorous state authority and the Vietnamese bandits.

The plunder, destruction, and depletion of fish in rivers and lakes by the Vietnamese is part of the policy to create starvation and famine in Cambodia's rural areas and destroy the right to life of the peasants and the entire Cambodian people and nation. This process will also deplete the Cambodian population.

II. The Ministry of Rural Areas, Agriculture, and Water of the Provisional Government of National Union and National Salvation [PGNUNS] solemnly and officially declares that:

1. The Vietnamese coming to Cambodia are an aggressor and territorial expansionist force that is exterminating the Cambodian race. The communist Vietnamese aggressors have sowed great destruction among the Cambodian nation and people for 14-15 years. They are carrying on a war of aggression to massacre and exterminate the Cambodian race. The communist Vietnamese aggressors and the traitorous two-headed government are guilty of serious crimes in the eyes of the Cambodian nation and people and mankind.
2. The plunder and destruction of fish, particularly through the use of electric currents, is a serious criminal offense. Using electricity as a fishing tool is banned everywhere the world over.
3. The Cambodian people have the right to oppose and fight by every means and method to defend themselves and to safeguard the interests and resources of the nation and people. The PGNUNS absolutely and firmly stands on the side of the Cambodian nation, people, and peasants.

[Dated] 23 September 1994

[Signed] The Ministry of Rural Areas, Agriculture, and Water of the PGNUNS

HONG KONG

Vehicular Pollution Cause of High Mortality Rate

HK0410072794 Hong Kong EASTERN EXPRESS
in English 4 Oct 94 p 4

[Article by Tad Stoner]

[FBIS Transcribed Text] One person dies every day in Hong Kong because of pollution from vehicles, the Environmental Protection Department has found. It said a reassessment of transportation policy would be required by 2020, but controlling vehicle pollution will require sustained political will.

The department's assistant director for air and noise, Fred Tromp, said yesterday that because Hong Kong's traffic was continually growing, the department was constantly struggling to keep pace. "Vehicular pollution is now our dominant problem. We are in violation of the fine-particulate standards, which have a direct link to mortality rates. "With diesel vehicles you're looking at a couple of hundred deaths per year, something like, say, one per day, and while there are a lot of causes, if you could bring pollution levels down, you could bring that to maybe 50 or 100 deaths per year."

Prior to yesterday's opening of a three-day East Asia Air Toxics Conference sponsored by the Hong Kong Productivity Council, Tromp said his department had plans to combat exhaust emissions, but bureaucratic foot-dragging was impeding progress. "We are now in violation of particulate standards, and it will stay that way for some years," he said. "We've got a plan, but we still need agreement and resources.

"If we were able to implement the measures on the table, we could meet [standards] by the end of the decade, although 20 years after that we will need to address transport fundamentally." The number of vehicles in Hong Kong had grown enormously in the past six years, and included more than 126,000 cars, trucks, buses and vans since 1988. In February, the Government reported more than 442,000 licenced vehicles on the roads, almost 3,000 more than at the end of 1993.

Enthusiasm for the electric car, billed as a pollution solution by the Financial Secretary, Hamish McLeod; had gone flat. A victim of bureaucracy, the car had not been on the road since overseas manufacturers delivered it to the Government Land Transport Agency (GLTA) in late 1993. The Government bought two of the vehicles at a cost of more than \$600,000, but returned one when the battery proved inadequate. "It came back with a modified system, which we wanted to put into the second vehicle," Raymond Leung, the principal environmental protection officer for air services, said. "It was fitted out for use, and then we had to install a [battery] charging system in the [transport agency] garage, so there was a lot of to and fro," he said. "We got the system [going] two or three weeks ago, and [the car] was supposed to be running by now."

The agency has developed yet another problem, Leung said. "The GLTA asked us to loan them the vehicle for assessment, and we're still-thinking about whether they should do it or we should do it," he said. "We see great potential for the electric vehicle, but I can't actually say when the EPD will get to run the vehicle," he said.

Yesterday's conference the first in Hong Kong to examine the problem of what is called "non-traditional" pollutants, has drawn delegates from nine Asian countries. Tromp said non-traditional pollutants included such chemicals as aromatic hydrocarbons, benzene and other industrial gases that have never been quantified in the local atmosphere.

A one-year, \$1m study by a U.S.-based environmental consultant would measure the presence of the materials, he said, and, depending on the results, legislation would follow. "We don't have a good feel for the Hong Kong problem and are facing an information gap," Tromp said. "But the Government is committed to cleaning up the problem by 1997."

INDONESIA

Suharto To Be Tried for Alleged Misuse of Funds

BK0410044094 Hong Kong AFP in English
0414 GMT 4 Oct 94

[FBIS Transcribed Text] JAKARTA, Oct 4 (AFP)—The Jakarta state administrative court (PTUN) will open a trial later this month with President Suharto as defendant over alleged misuse of funds intended for reforestation, an official said here Tuesday.

"The trial will be started on October 17 and it will be open to the public," PTUN Chairman Benyamin Mangkudilaga, contacted by telephone, said.

Mangkudilaga, who will personally head the panel of judges at the trial, said President Suharto would probably be represented by his lawyers.

Seven non-government organisations (NGOs) including the Indonesian Environmental Forum (Walhi) brought the charges against Suharto in June, saying a presidential decree issued then violated an earlier decree.

In the later decree, Suharto ordered the forestry ministry to grant 400 billion rupiah (184 million dollar) in interest-free loans from reforestation funds to the state aircraft manufacturer Industry Pesawat Terbang Nusantara (IPTN) headed by Research and Technology Minister Bacharuddin Jusuf Habibie.

Head of IPTN, Habibie said the loan was to be used to develop the first Indonesian-designed aircraft, the N-250, a 64-seat turboprop commercial passenger aircraft which is planned to be launched in the presence of 15 Asia Pacific head of states in November.

The NGOs are seeking to have the decree revoked, saying it runs against an earlier decree, issued in 1990,

which stipulates that reforestation funds should be allocated only for reforestation programs. The government collects a set fee for every cubic metre of log felled from a forest concession and use it for reforestation efforts.

According to Walhi official, Emy Hafield, the government's statistics showed that reforestation funds have reached 2.4 trillion rupiah (1.1 billion dollars), generating annual bank interest of about 900 billion rupiah.

Hafield has said the loans granted to IPTN was bigger than the funds allocated to the forestry ministry for the 1994/1995 fiscal year which began in April, which stood at 138 billion dollars.

The NGOs were questioning the president's accountability in granting funds while the government's efforts to replant critical forest have not met their targets.

The government has managed to replant 480,000 hectares (1.18 million acres) of forest in the past five years, far from the targetted 1.9 million hectares (4.69 million acres), she said.

Hafield said Indonesia's tropical rain forest, which covered about 119 million hectares (293 million acres) in 1985, had declined to 92.4 million hectares (@27.4 million acres) by 1990.

These figures produced an annual forest depletion rate of 2.4 million hectares (5.92 million acres) compared to the 600,000 hectares (1.48 million acres) declared by the government, she said.

JAPAN

Tokyo Environment Conference To Focus on Population, Trade

OW2709141094 Tokyo KYODO in English
1353 GMT 27 Sep 94

[FBIS Transcribed Text] Tokyo, Sept. 27 KYODO—An international conference in Tokyo in October will focus on the impact on the environment of population and free trade, organizers said Tuesday [27 September].

The three-day conference which starts Oct. 24 will also discuss funding for the environment and citizen-level cooperation in environmental preservation.

The conference has the backing of two former Japanese prime ministers, Toshiki Kaifu and Noboru Takeshita, as well as Gaishi Hiraiwa, the former chairman of the Japan Federation of Economic Organizations (Keidanren).

It is designed as a sequel to the eminent persons' meeting on financing global environment and development which was held in Tokyo in April 1992, two months before the United Nations-sponsored Earth Summit in Rio de Janeiro, Brazil.

That meeting was convened by Takeshita and was designed to garner financial support from the developed world for preserving the world's environment, particularly in developing countries.

Maurice Strong, a Canadian who served as secretary general of the Earth Summit, will chair the conference. Strong also participated in the eminent persons' meeting.

German Minister for the Environment Klaus Topfer, who heads the UN Commission on Sustainable Development, will be among those presenting keynote reports to the conference.

The relationship between free trade and the global environment in the wake of the Uruguay Round of trade negotiations and the impact of the world's population on the environment will be the main topics on the agenda, organizers said.

An open symposium on Oct. 26 will focus on a special UN environmental general assembly planned for 1997.

Former Mexican President Miguel de la Madrid will be among the symposium panelists.

MITI To Work Out New Industrial Link-Relation Table

OW2609121594 Tokyo SANKEI SHIMBUN
in Japanese 25 Sep 94 Morning Edition p 5

[FBIS Translated Text] The Ministry of International Trade and Industry [MITI] has decided to compile an "Industrial Link-Relation Table for Asian Environmental Programs" (tentative name) to facilitate the drawing up of industrial policies that envisage balance between economic growth and environmental conditions. The industrial link-relation table shows how the growth of certain industries affects other industries. MITI has already begun preparations which involve incorporating into this table data on effects of industrial development on the environment. It hopes that this table will be used in all parts of Asia, including Japan, for drawing up industrial policies that give consideration to the environment. The ministry also plans to complete the table as early as by the end of fiscal year 1996 and hopes to propose its idea at a meeting of the APEC forum for discussing policies.

An industrial link-relation table lists transactions on products and services among various industries in a designated country. Since this table can be used to calculate the economic impact that a change in demand in a certain industry has on the gross domestic product (GDP), it has become an indispensable tool in drawing up economic policies.

In addition to showing conventional, pervasive economic effects, MITI's new industrial link-relation table for environmental programs will include as data how the amount of three atmospheric pollutants,—carbon

dioxide (CO₂), nitrogen oxides (NO_x), and sulfur oxides (SO_x)—released as a result of industrial output, affects the environment.

MITI has listed Japan, the PRC, Taiwan, the ROK, Indonesia, Malaysia, the Philippines, Singapore, and Thailand as areas subject to its analysis in compiling the industrial link-relation table.

The ministry has asked for 350 million yen in the next fiscal budget for building a data base on energy sources and long-term prospective energy demands for the entire Asian region. MITI plans to compile a new industrial link-relation table by putting together these data with the "Asian International Industrial Link-Relation Table," which the Asia Economic Institute compiled in September 1992, and data on the released amount of the three atmospheric pollutants that MITI is currently gathering.

As regards environmental measures, efforts have been undertaken to develop technology to help restore the environment in individual sectors. For example, projects have been undertaken to develop trash recycling systems and low-pollution vehicles. However, even if these projects were to materialize, there has been no way of predicting how this would affect the entire society in terms of economic benefits and environmental improvement. When the Industrial Link-Relation Table for Asian Environmental Programs is completed, it can be used to draw up macroeconomic policies on determining who should bear responsibilities for causes of pollution, such as petroleum products.

Group Draws Up Environment-Protection Standards

OW2609131294 Tokyo KYODO in English
1157 GMT 26 Sep 94

[FBIS Transcribed Text] Tokyo, Sept. 26 KYODO—The International Organization for Standardization (ISO) has drawn up a draft accord for world standards on environment protection and corporate activities, Japanese Government officials said Monday [26 September].

The centerpiece of the draft agreement is a rule which requires companies of the endorsed countries to announce their policies and goals for environmental protection and to set up an action program to attain the goals, the officials said.

The draft agreement also includes a plan to establish an auditing system—like that for company accounts—to check whether each corporation's environmental-protection activities are in line with international standards, they said.

The ISO plans to approve a certifying label for products which meet the standards so consumers can recognize it, according to the officials.

They said the international standards on environmental conservation will be launched in January 1996 if all preparations go smoothly.

After the standards are set, Japan will include them in the Japan industrial standards, the officials said.

The ISO, established to set global standards for products and units to promote international cooperation in research and development projects as well as in economic activities, has worked on the environmental protection standards since 1993.

The draft accord was compiled in its latest meeting held in Vienna last week, the Japanese officials said.

SOUTH KOREA

ROK To Attend Environmental Conference in Kinosaki, Japan

SK2709033394 Seoul YONHAP in English
0138 GMT 27 Sep 94

[FBIS Transcribed Text] Seoul, Sept. 27 (YONHAP)—South Korea will attend the third Northeast Asian conference on environmental cooperation opening in Kinosaki, Hyogo Prefecture, Japan, on Wednesday as the controversy over the meeting's Japanese designation, "Pan-Japan Sea Environmental Cooperation Conference," has been resolved.

The Seoul government earlier threatened to boycott the meeting in protest against the sponsors' insistence on calling it the "Pan-Japan Sea Environmental Cooperation Conference" in Japanese.

The Japanese side has changed its plans, however, informing Seoul that it will not use the controversial Japanese designation in placards, pickets or literature regarding the meeting, according to an Environment Ministry official.

A nine-member South Korean delegation led by An Yong-chae, the ministry's international cooperation officer, departs for Japan Tuesday afternoon.

South Korea and China first raised objections to the Japanese designation during the first Northeast Asian conference on environmental cooperation held in Niigata, Japan.

The Kinosaki conference, slated to last until Saturday, will be attended by five countries—South Korea, Russia, China, Mongolia and Japan—whose delegates will discuss cooperation to prevent environmental pollution in the East Asian region.

MALAYSIA**Government Denies Exaggerating Pollution Danger**

BK0310143494 Kuala Lumpur NEW SUNDAY TIMES in English 2 Oct 94 p 2

[FBIS Transcribed Text] Kuala Lumpur, Sat.—Department of Environment [DOE] Director General Datuk Abu Bakar Jaafar today denied that Malaysia was exaggerating the dangers of the haze.

He said the DOE has assessed the situation by using scientific measurements and was not making statements based on rumors.

He was commenting on Indonesian Co-ordinating Minister for Political and Security Affairs Susilo Sudarman's statement that the haze caused by the blazing forests in Kalimantan and Sumatra was not as dangerous as Malaysia claimed to be.

Susilo was reported as saying that Malaysia should not exaggerate the matter and raise fear among the public.

Abu Bakar said the DOE and Meteorological Services Department has evidence of the burning forest in the form of satellite imageries.

"We are not cooking up the figures on the impact on public health," he said in the press briefing on the haze situation.

Government Declares Nationwide Alert on Haze

BK3009130894 Kuala Lumpur NEW STRAITS TIMES in English 29 Sep 94 pp 1, 2

[FBIS Transcribed Text] Kuala Lumpur, Wed.—The Government today declared a nationwide alert on the haze following reports that the situation in most States had deteriorated.

In so doing, the public is advised to take immediate steps to stop open burning and reduce the number of motor vehicles on the road.

Industries and power utilities are told to reduce fuel burning.

The public is also advised to safeguard their health by drinking plenty of water, seek medical help when necessary, consider wearing surgical masks, avoid strenuous outdoor exercises, clean air-conditioning filters and stay indoors as much as possible.

The alert was announced by Science, Technology and Environment Minister Datuk Law Hieng Ding at a Press conference here this afternoon, citing the worsening conditions as the reason.

The situation is particularly bad in the Klang Valley.

Law added that if it worsens, the Ministry may propose that schools be closed to safeguard the health of pupils.

(The air quality index is the measure by which air pollution's effect on health is gauged. Air quality index of between 201-300 micro grams per cubic metre is considered "very unhealthy" while between 301 and 500 is considered "hazardous")

Today's air quality index measures 247 micro grams per cubic metre, which falls in the "very unhealthy" level.

Law, however, said the alert should serve to remind the public of the worsening condition and was not done to cause panic.

The Klang Valley's ground visibility has also been reduced severely to a range of less than 1.5 kilometres.

In Terengganu, Pahang, southern Perak, Selangor, Negri Sembilan, Malacca and Johor, the haze worsened since yesterday. In Sabah and Sarawak, it did not improve either.

Law said the main cause for the worsening of the haze was the change in the wind direction.

Between Sept 18 and last Sunday, the haze improved because low-level wind was blowing from the northwest (from the Indian Ocean) which prevented the smoke particulates from the forest fires in southern Sumatra from reaching Peninsular Malaysia.

But since Monday, the wind direction has changed again, blowing from the southeast (from southern Sumatra) which brings with it particulates from the forest fires there to the peninsula.

According to Meteorological Services Department director-general Cheang Boon Khean, who was present at the Press conference, the haze was unlikely to ease for the next few days based on the data received from its European counterparts. He added the wind blowing from the northwest could only occur intermittently next month.

Any long spell of haze free days can only occur when the wind direction changes in November.

"During November, more rain can be expected over southern Sumatra which may help to extinguish the forest fires there," he said.

On the cause and the extent of the forest fires in Sumatra which aggravated the haze problem in Malaysia and Singapore, Law said the Indonesian authorities had yet to provide any details.

"It is only fair for Indonesia to break its silence and come up with a clarification since the impact from the forest fires is affecting us (Malaysia and Singapore)."

On Malaysia's part, Law said it would hold a regional conference, with participation from Singapore, Brunei and Indonesia on transboundary pollution. It will be held on Oct 6 in Penang.

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He said his Ministry would submit a Cabinet paper in the middle of next month on an action plan for Clean Air in Malaysia for the period between this year and 1997.

At the Kuala Lumpur International Airport in Subang near here pilots have been instructed to fully use the instrument landing system (ILS) and other navigational aid for approaches and departures in view of the worsening haze.

A Department of Civil Aviation senior official told the New Straits Times today visibility at the Subang airport was down to seven to eight kilometres from 10 kilometres last week.

PHILIPPINES

Committee Wants Ramos, Clinton To Discuss Toxic Waste

BK2709052094 Quezon City Radio Filipinas in English
0230 GMT 27 Sep 94

[FBIS Transcribed Text] The Senate Blue Ribbon Committee will call on President Ramos to include in his agenda with American President Bill Clinton the issues of toxic and hazardous wastes in the former U.S. bases of Clark and Subic. Foreign Affairs Assistant Secretary (Josue) Villa said the agenda for the Ramos-Clinton talks has not been finalized, but the inclusion of the toxic and hazardous wastes issues can be considered once a formal request is presented to the Department of Foreign Affairs.

Senators Wigberto Tanada and Orlando Mercado, several nongovernment organizations, local officials, and officials of the Subic Bay Metropolitan Authority and Clark Air Base Development Corp., want the government to demand that the U.S. Government shoulder the expenses to clean-up areas they abandoned in 1991.

Villa said Clinton is expected to arrive on 13 November for a brief visit while on his way to Jakarta for the Asia-Pacific Economic Cooperation conference.

A 1994 report conducted jointly by the nongovernmental Unitarian Universalist Service Committee and the Philippine Coordinating Committee on Bases Clean-Up found that there were 14 known contaminated sites in Subic and five in Clark. The report said known contaminated sites that they documented [words indistinct], dumping or burying of toxic waste materials. According to the report the contaminated sites in Subic include the Public Works Center, Subic Power Plant, fleeting-mooring-(?sound) blasting yard, Navy Exchange Taxi Compound, ship repair facility, and the naval supply

depot. In Clark, the contaminated areas include the mechanical room, supply storage yard, the Clark-Subic petroleum oil lubricant pipeline.

TAIWAN

Agriculture Council Confirms Attendance at CITES Meeting

OW3009101794 Taipei CNA in English 0915 GMT 30 Sep 94

[By Sofia Wu]

[FBIS Transcribed Text] Taipei, Sept. 30 (CNA)—The Republic of China [ROC] will send delegates to the annual meeting of the United Nations environmental arm to explain its wildlife conservation policy, the Council of Agriculture (COA) announced Friday [30 September].

"The Convention on International Trade in Endangered Species (CITES) has agreed to Taiwan's application for attending its annual meeting scheduled for November in Florida," the council said in a press release.

As Taiwan is not a UN member, it will be allowed to attend the CITES meeting only as a non-government organization under the name of the ROC Society for Wildlife and Nature (SWAN), COA officials said.

SWAN is a private organization founded in Taipei in 1980 to promote wildlife conservation and environmental protection.

During the its forthcoming annual meeting, CITES will review Taiwan's progress in wildlife protection and decide whether to impose trade sanctions on Taiwan for its failure to eliminate illicit trade in tiger bones and rhino horns.

The Taiwan delegation, to be headed by SWAN President Chen Tien-fu, is expected to brief CITES members on Taiwan's recent efforts to wipe out illicit wildlife trade to prevent any possible trade sanctions, the COA officials noted.

The delegation will include officials from the COA, the Department of Health, the Foreign Affairs and Economic Affairs Ministries and the Government Information Office. Some animal and flora experts will also join the mission.

With COA assistance, SWAN is transforming itself into an international wildlife conservation group so that it can become a CITES observer. It has so far set up branches in Japan, Israel and Thailand. Nevertheless, the COA officials said, there is still a long way to go for SWAN to obtain CITES observer status.

Agriculture Head, U.S. Lawmakers on Wildlife Conservation

OW2409075794 Taipei CNA in English
0720 GMT 24 Sep 94

[By T.C. Hu and Y.C. Tsai]

[FBIS Transcribed Text] Washington, Sept. 23 (CNA)—Paul Sun, chairman of Taiwan's Council of Agriculture, met with two U.S. lawmakers Friday [23 September] to exchange views on Taiwan's wildlife conservation efforts.

Sun went to Capitol Hill to call on Senator Jim Jeffords (R-VT.) and Rep. John Porter (R-ILL.), who were positive toward various wildlife conservation measures put into force recently in Taiwan.

Both said that it is unfair for the Clinton administration to impose trade sanctions on Taiwan's wildlife specimens and products in August while neglecting Mainland China's bad record in this regard.

They said that they expected Taiwan to do better in wildlife conservation after amendments to the wildlife conservation law are passed by Taiwan's legislature. Amendments to the law are pending approval from the legislature, sun noted.

Senator Jeffords introduced a resolution adopted at a Globe (the Globe Legislators Organization for a Balanced Environment) meeting last year asking the world's lawmakers to write to President Li Teng-hui to urge Taiwan to thoroughly eliminate the illegal trade in rhino horn and tiger bone.

Rep. Porter is currently vice president of Globe USA.

Sun also met with James Schroeder, deputy under secretary of the U.S. Department of Agriculture, to discuss matters involving cooperation in agricultural expertise.

Later in the day, Sun left for Los Angeles en route to Taipei, concluding his four-day visit to Washington, D.C.

During his stay here, he also visited the U.S. Department of the Interior as well as international conservation organizations such as the Nature Conservancy and World Wildlife Foundation (WWF).

He is scheduled to arrive in Taipei Monday.

THAILAND**Officials Pressuring Karens To Leave Wildlife Sanctuary**

BK2509103794 Bangkok THE SUNDAY POST
in English 25 Sep 94 p 4

[FBIS Transcribed Text] Chiang Mai—Officials have been applying pressure to force about 200 families of ethnic Karen to move out of Omkoi wildlife sanctuary.

The latest measure being used is that newly-born babies of the Karen will not be issued with birth certificates and the children cannot go to school in the districts, according to a petition sent by the Karen to the Northern Farmers' Network, a non-governmental organisation [NGO].

Wichian Yupra, a leader of the tribesmen, reportedly told the NGO that district officials had been told not to issue them with ID cards and also hospitals were told to deny them medical treatment as a means to force them out of the sanctuary.

The Forestry Department wants to evict all people from the sanctuary especially those living in and near watershed areas, to save trees from being felled.

Wichian said they were offered five rai of farmland per family if they agreed to move out. However, he noted the land was not suitable for cultivation and some was already occupied.

He said his people, who had been living in the area for decades, would resist the eviction.

BRAZIL

Russians Offer Remote Sensing Satellite Services at Seminar

PY2809235494 Sao Paulo GAZETA MERCANTIL in Portuguese 27 Sep 94 p 12

[Article by Rio de Janeiro correspondent Heloisa Magalhaes]

[FBIS Translated Excerpts] At the opening yesterday of the ECO-RIO 94 seminar gathering together environmentalists from 35 countries, the National Institute of Space Research (INPE) presented the GeoEsfera project together with the Canadian telecommunications company Northern Telecom. [passage omitted]

The GeoEsfera project—which has also been installed in the United States, Canada, Italy, Russia, and Brazil—is one of the attractions of ECO-RIO 94. The seminar, which precedes the one to be held in Vienna, Austria, in June 1996, has as its central topic the remote sensing of the environment.

Russian scientists who are in Brazil to participate in the ECO-RIO 94 seminar will present a new area of trade in which Russia is becoming active: They are offering remote sensing satellite services. The advantage of the Russian proposal is that their photographs are taken from a much smaller distance of 5 km, and are thus much more exact. Current satellite images are taken from distances ranging from 20 to 30 km.

It is not only the Russians who will offer services for the area. PRC representatives will also present their country's strategy in the satellite field, including telecommunications satellites. In October 1996 the PRC and Brazil will jointly own a remote sensing satellite. Brazil is paying for one-third of the \$150 million satellite, which will be launched in the PRC within the framework of the Long March program.

CHILE

Government Ratifies UN Biodiversity Agreement

PY2909224394 Santiago EL MERCURIO in Spanish 10 Sep 94 p C4

[FBIS Translated Excerpt] The government delivered yesterday to UN headquarters the document ratifying the Biodiversity Agreement, meaning that Chile has become part of one of the basic agreements related to the protection of the environment signed at the Earth Summit in Rio de Janeiro in 1992.

This information was provided by Pablo Cabrera, special policy director of the Foreign Ministry, who said that the agreement establishes the principle of rational use of natural resources for sustainable development. The agreement will also allow the conservation of species, and the preservation of genetic variety and ecosystems. [passage omitted]

REGIONAL AFFAIRS

Israel Seeks To Keep Nuclear Refuse Out of Ecology Talks*TA0310202294 Jerusalem Israel Television Channel 1 Network in Hebrew 1800 GMT 3 Oct 94*

[Announcer-read report]

[FBIS Translated Text] Israel has appealed to Bahrain with a request that the issue of nuclear refuse not be dealt with in the course of the ecological discussions that will take place there this month. The advance Israeli delegation returned from Bahrain this morning, after having also toured the Bahrain-Saudi Arabia border. Our political correspondent Gadi Sukenik has learned that Israel adopted this step because Egypt is continuing to pressure Israel to allow supervision of its nuclear refuse as a way of getting at the nuclear facilities. The Egyptian Foreign Ministry official in charge of this area came to Israel about a month ago and held discussions with senior Jerusalem officials on this issue.

MAURITANIA

Nouakchott Hosts Arab Conference on Renewable Energy*AB0210160694 Nouakchott ORTM Radio in French 2000 GMT 30 Sep 94*

[FBIS Summary] "Nouakchott recently hosted the meeting of the Arab Council on Renewable Energy. Recommendations were made at the end of this meeting for the intensification of consultations and coordination between Arab countries through exchange of experiences in that area." Participants also proposed to the renewable energy committee a request to UNESCO to support ARESO's [expansion unknown] solar energy program.

After the conference, (Nana Ould Aidet), director general of the Mauritanian Company for Renewable Energy [SOMER] spoke to our correspondent, Mohammed Lamine Baque, on the issues discussed: [begin recording]

(Aidet:) "Our country exchanged views with all the delegates and institutions which attended the conference in the field of renewable sources of energy, a field which is very important for Mauritania and all developing countries. We were able to get information on the general situation in the Arab world on the kind of policies adopted for the popularization of renewable sources of energy." Mauritania has a preponderant role to play in this popularization program, both in the public and private sectors. Through many projects the government plans to popularize renewable sources of energy

throughout the country. There are projects on solar energy, solar pumps, and so on. Concerning the private sector, we currently have engineers, specialists in this field, who have private companies that practice their trade in Mauritania. So, the popularization is being done quite normally.

Baque: "What encouragement do you give to Mauritians who would like to use this kind of energy?"

(Aidet:) "We encourage communities as well as individuals to use this kind of energy. For example, there are communities who have pumping stations or rural communities with polyclinics that use solar energy. Concerning the private sector, there are local private companies that organize promotional prices for some basic necessities, or for those products which help improve people's living standards." [end recording]

SRI LANKA

Official Discusses Environmental Steps in Industries*BK2609141794 Colombo Sri Lanka Broadcasting Corporation International Service in English 1045 GMT 26 Sep 94*

[FBIS Transcribed Text] The Board of Investment [BOI] is taking precautionary measures to overcome environmental impacts arising from industrial development. These apply to industries in the export processing zones and licensed enterprises outside the zones. BOI has established its own environmental monitoring laboratory at Bayogama. Environmental impact assessment is carried out in respect of all project proposals whether they are within or outside the zones. According to the senior manager of environment of BOI, T. Fernando, where adverse impacts are identified, mitigatory measures are stipulated as conditions of project approval. While promoting industrial development through foreign and local investments, the BOI is also committed to facilitate its own projects. He said that export processing zones have been established by BOI with infrastructure facilities. Two well-established loans [as heard] are being maintained at Katunayaka and Bayogama. Infrastructure provided includes common waste water collection, treatment and disposal system, and compliance monitoring of industries within these sites are carried out on a regular basis. [sentence as heard] He said that the domestic and industrial (?effluents) arising from the industries are collected and treated in a central system. This was to ensure conformity to the relevant standards prior to disposal. Safeguards against noise pollution are stipulated as conditions for approval. Occupational health and safety requirements are also stipulated at the project approval stage.

REGIONAL AFFAIRS

Military Continues To Damage Environment

944K2392C Kiev ZELENYY SVIT (SPECIAL EDITION) in Russian Aug 94 pp 30-31

[Unattributed article: "Fighting on Nature's Side (In Lieu of a Conclusion)"; special edition copy received 29 Aug 1994; published between No 9 and Nos 10-11 1994]

[FBIS Translated Text] Only 12 of the 227 locations from which Soviet troops were withdrawn in the former Czechoslovakia did not suffer considerable ecological damage. Total environmental damages have been set at 243 million korunas. In Poland the environmental damage caused by the Soviet Army totaled 4.6 billion dollars, and in Latvia it amounted to 13.5 billion rubles between 1945 and 1991.

Whereas these and other East European countries are rid of the main enemies of their environment forever, the situation in Ukraine, Belarus, Russia, Kazakhstan, and other CIS countries is fundamentally different. The former Soviet generals may have changed the color of their flag and may call themselves Ukrainians, Russians, Kazakhs, and Belarusians, but their attitude toward nature has not changed at all. On the contrary, the thirst for a powerful shield and a sharp sword has made the military stance even more rigid.

Instead of adhering to the general policy line of demilitarization, we are beginning to play "soldiers" again, just as we did under the Bolsheviks, and we have so much room to indulge our passion for this game. In Ukraine, for example, military installations and test sites occupy 700,000 hectares of land and 300,000 hectares of forest. The Ukrainian Army has 680,000 soldiers and is one of the largest in the world. In January 1992 there was one soldier for every 43 people in Belarus, one for every 98 in Ukraine, one for every 118 in Kazakhstan, one for every 528 in Turkmenistan, and one for every 634 in Russia. In Ukraine, 700 plants and official scientific research institutes work for the "defense establishment" and employ a million and a half people. Ukraine spent 108 billion rubles on its army in 1992. This is equivalent to the amount spent on the social protection of the population in 1993. At the end of 1992 the Ukrainian parliament allocated the incredible sum of 120 billion rubles for militaristic spasms from a total budget of 620 billion rubles, or almost 20 percent of the total! Meanwhile, allocations for ecology amounted to only 0.03 percent of the total! Another 30 billion was given to the security service and the Ministry of Internal Affairs.

The situation is no better in tiny Belarus (the most highly militarized country in the world), where 15.5 percent of the budget is earmarked for defense (the figure is only 1 percent in Japan). In Russia the military-industrial complex employs 15 million people, and the Ministry of Defense still has 47 restricted cities and settlements in Russia.

How then do the countries of the CIS differ in principle from the now deceased international military bogey—the USSR? It had around 5,000 marshals, generals, and admirals, and more than 80 percent of machine building there was toiling long and hard for the defense establishment. Four percent of the country's territory was occupied by test sites and bases, and the military-industrial complex cost 300 billion rubles a year, or almost 50 percent of all national income! The amount allocated for defense in the USSR in 1991 was 96.5 billion rubles, or 35 percent of the total budget (6.5 percent in the United States), and the military complex employed 8 million people, or four times as many as in the United States. The monster is dead; long live the monsters!

Unfortunately, the leaders of the CIS countries do not realize that the well-being of present and future generations requires peace and security. The world community can no longer accept the current military definition of security. Today people need a broader definition of security, including the right of people and other creatures to live in a healthy environment. The non-military resolution of conflicts should become the norm for all people. Negotiation, mediation by an international court or other body, or sanctions must be substituted for military activity in any conflict situation.

Justice demands the prohibition or alteration of economic systems and trade practices creating the social conditions for war and for unequal economies with an excessive dependence on militarism.

The army must confront our real enemies. The number-one enemy is pollution. This is a job for ecological units, for which a basis was laid a long time ago in the armed forces in the form of chemical and radiation subunits. The land belonging to the military-industrial complex needs reclamation. There is enough work here for centuries, and soldiers would come back home as farmers. There is a vital need for military rescue units. Forest fires are consuming more timber than we cut for consumption, and there is virtually no one to put out the fires. We could add earthquakes, floods, oil spills, chemical accidents, and radiation to the list. These teams could also plant new forests when there are no emergencies. The volunteers in this kind of army could always find jobs in emergency medical centers, orphanages, and homes for the elderly and disabled. The ecological troops could become a particularly important subdivision of the Ukrainian Army or any other army in peacetime.

The publication of ecological information about military installations is a matter of special concern. According to the directives of the General Staff of the USSR Ministry of Defense, after 1982 local soviet bodies and environmental protection agencies did not receive statistical reports on the ecological problems of military subunits. The highly contaminated cities belonging to the military-industrial complex of the USSR were not on the lists of polluted cities prepared by the State Committee for Statistics and the State Committee for Environmental

Protection. People could live next to an ecologically hazardous military installation without ever knowing it. Nothing was known about the territory set aside for military bases, test sites, and units for a long time.

All of this "secrecy" should have ended long ago. The personnel of environmental agencies should have the right to inspect any military installation without any advance notification. Ecological statistics on any defense facility should be submitted, without question or delay, to local authorities and environmental agencies. Furthermore, it would be best to start conducting complete environmental inspections of all military facilities and begin setting up a special system for the ecological monitoring of military units. The law should not allow the military to change the natural landscape in territories used for test sites and bases.

This will necessitate the passage of several strict environmental laws with regard to military activity. In particular, it is time to pass laws recording the obligation of the armed forces to pay compensatory damages for farmland and woodland affected adversely by military training and exercises. The Finnish Army has a "green paper" advising commanding officers and rank-and-file personnel how to minimize environmental damage during the performance of their official duties.

Our country is littered with heaps of scrap metal in the form of huge quantities of stored military equipment. Its use for civilian purposes still has not been organized. Today soldiers who are caught poaching are exempt from the payment of fines because of some obsolete edict. In what way are they superior to civilian poachers? And what good are the unscrupulous military procurators who obstruct justice in virtually all environmental cases on the orders of the generals who are their superiors? It is time to carry out actual conversion and reduce the armed forces to one-half or one-third of their present number and to then use the funds made available in this way to finance the Chernobyl program, which is suffering from an almost total lack of financial support. A law must be passed as quickly as possible to limit the effects of militaristic propaganda on children. This also applies to martial arts training for children in schools, to war toys, and to military plots and violence in serial films, children's books, and games.

New field manuals should include ecological requirements.

Environmental monitoring agencies were created in military units in 1987 by Order No 169 of the USSR Ministry of Defense, but they were not given any powers. Unfortunately, this situation is being repeated by the Ukrainian Ministry of Defense. The Ukrainian Defense Ministry does not want to monitor itself, and the Ukrainian Ministry of Environmental Protection cannot do this.

The Russian Ministry of Defense has an Administration for Ecology and Special Protective Equipment to monitor the observance of environmental laws by troops and

organize work to combat the environmental pollution resulting from military operations. We can only hope that other national armies will follow this example.

RUSSIA

Environmentalists Protest Nuclear Fuel Processing Plant

LD2909213594 Moscow INTERFAX in English
1901 GMT 29 Sep 94

[FBIS Transcribed Text] The Social-Ecological Union has called for renouncing the plans of completing the construction of a nuclear fuel processing plant in Krasnoyarsk-26, Siberia.

The head of the press service of the environmental organization Oleg Stakhanov told Interfax on Thursday their experts learned about a presidential decree in the making at the Ministry for Nuclear Energy under which the Krasnoyarsk State Company should be set up to attract foreign investments in the completion of the project. The new company would have the right to sign contracts on storing and processing used fuel from nuclear power stations. The facility would recycle the fuel for industrial and energy purposes.

Stakhanov said the plant would be a serious environmental danger to the region because of possible technological accidents and the enormous amount of resulting radioactive wastes.

According to the organization, the operation of a mining and chemical corporation in Krasnoyarsk-26 has resulted in 4 Mn cubic meters of radioactive wastes with a combined radioactivity of 700 Mn curies being pumped underground. An examination conducted by environmentalists in 1993 showed that wastes were leaking from underground stores in the direction of the Yenisei river.

Stakhanov named as another danger the possibility that the Ministry for Nuclear Energy would sign contracts for processing fuel from foreign power stations which would lead to the accumulation of foreign nuclear wastes in Russian territory.

Nuclear Waste Recycling Negotiations Underway With Switzerland, Others

Moscow NEZAVISIMAYA GAZETA in Russian
20 Sep 94 p 1

[Article by Andrey Vaganov: "RF Minatom Does Not Intend to Give Away Plutonium; Question of Storage and Processing of Nuclear Waste From Switzerland Has Not Been Totally Resolved in Russia"]

[FBIS Translated Text] As we have learned, bilateral Russian-Swiss negotiations were held on 24 May 1994 in St. Petersburg, at which the possibility and the conditions—including financial—of sending radioactive waste

(RAW) from Switzerland to Russia were discussed. Participating in the negotiations from the Swiss side was the leadership of the AES [atomic power plant] in Gesgen, and from the Russian side—specialists from the Radium Institute imeni V. G. Khlopin (St. Petersburg), who presented "scientific consultations on the project of building a storage facility and processing plant in Krasnoyarsk." As stated in the protocol of intent signed according to the results of the negotiations, the questions of "storage and/or processing of fuel elements from Switzerland in Russia" were discussed at the meeting. The money which could be received as a result of realization of the contract, if such is signed, would go for the construction of the world's largest plant for processing spent nuclear fuel from the AES.

The coordinator of the "Greenpeace Russia" anti-nuclear campaign, Lika Galkina, had the following comments on the fact of holding the negotiations and the intent of the Minatom [Ministry of Atomic Energy] of Russia to conclude the construction of the RT-2 processing plant in Krasnoyarsk-26: "The nuclear industry of Switzerland hopes to solve the problem of its nuclear waste by burying it in Russia... Moreover, the construction and operation of the RT-2 would mean that Russia would offer domestic and foreign contractors new tonnes of plutonium suitable for the production of weapons." (The "Greenpeace" representatives even cited a specific figure: The opening of the RT-2 would mean obtaining plutonium in an amount sufficient for production of 428 atom bombs per year).

However, there is also another view of the problem, which differs from the "Greenpeace" approach. The plant in Krasnoyarsk-26 is necessary to Russia certainly not for the purpose of supplying the world with weapons-grade plutonium. We have already related the situation which has arisen surrounding the completion of construction of the RT-2 (cf. NEZAVISIMAYA GAZETA dated 7 July 1994). First undertaken back in the mid-70's, it was halted in 1989 due to a catastrophic shortage of budget funds for its completion. They were, however, able to place into operation in 1985 a storage facility for spent nuclear materials with capacity of 6,000 tonnes of heavy metallic fuel. Today this storage facility is filled to approximately 30 percent of its capacity. And while the heat-emitting elements (TVEL's) from the Russian ice-breaker fleet, as well as from the VVER-440 reactor and other low capacity reactors are being processed at the RT-1 plant in Chelyabinsk-40, it is still unclear what is to be done with the spent TVEL's from the RBMK-1000 and VVER-1000 reactors. No decisions have yet been made on the RBMK-1000, and the TVEL's from them are simply being stored without processing. Yet it was specifically for the purpose of processing the remnants from the VVER-1000 that the RT-2 was being constructed, and huge funds have already been invested in this project.

The general director of the Krasnoyarsk Mining-Chemical Combine, Valeriy Lebedev, was one of those

who even two years ago proposed a scheme for solving the problem of financing. Russia takes spent nuclear fuel from foreign countries for temporary storage. (Naturally, not for free. According to expert evaluations, in 1995 alone the revenues to the state budget might comprise over \$100 million). For the money which is received, the construction of the RT-2 is completed, the foreign radioactive waste is processed and sent back to its "homeland." There is also a possible variant under which not the processed radioactive waste would be sent back, but finished products—TVEL's.

As our NEZAVISIMAYA GAZETA correspondent learned from sources in the RF Minatom, the discussion of this scheme was conducted not only with representatives from Switzerland, but also with Taiwan, the KPDR [Korean People's Democratic Republic] and other countries. "But all these are preliminary negotiations which have not been formulated by any obligations or agreements," reported a high-level official of the RF Minatom. In response to the question of whether countries such as Iran or the KPDR would demand the plutonium back from their processed nuclear waste, he stated: "We are strictly adhering to the treaty on non-proliferation of nuclear weapons. We will, of course, not return any plutonium to them. Everything is in our hands and will depend on what agreement we conclude with them."

Then again, it is still too early to speak of any specific agreements. First of all, it is necessary to receive the approval of the government. In the RF Minatom they make no secret of the fact that they are pinning their hopes on a promise by the President of Russia to prepare an edict on completion of construction of the RT-2. In the opinion of experts at the atomic department of Russia, there is no other means for realizing the anticipated edict but the proposed scheme.

Fire Danger in Radioactive Forest Viewed

MM2809103594 Moscow *RABOCHAYA TRIBUNA*
in Russian 24 Sep 94 p 4

[Report by correspondent Eduard Morokhov: "Chernobyl's Smoldering Fires"]

[FBIS Translated Text] Bryansk Oblast—As in the good old days the home of master forestry official Vasiliy Semenovich Pustovoytov and his wife Mariya Alekseyevna is a land of plenty. And they are always pleased to see guests here. The table is groaning under the food, the white pickled mushrooms, gherkins, cranberry juice, fresh pike and carp soup, and pancakes with sour cream demonstrating the kindness and hospitality of the home owner and the land's bounty.

We sat in a cool, clean room beneath holy images and had a leisurely talk about life to the measured tick of the grandfather clock. The Chernobyl disaster did not bypass this precious area of pine forest. The ancient Russian village of Staryye Bobovichy where forestry officials and grain growers live was in the evacuation

zone. People had their livestock confiscated, were asked to leave their homes, and told that everything there posed a danger to life and health.

It is dangerous to walk on the grass, swim in the Iput, pick berries, drink water from the spring, and breathe the air in the oak forests here. Homes for these migrants have been built elsewhere, hundreds of kilometers from their native village.

The Pustovoytov family and most of their fellow villagers stayed in Staryye Bobovichy. Vasiliy Semenovich could not leave the graves of his forebears or cast to the will of fate the forest which his grandfather had planted and he had tended with his own hands.

Now all this, in the radiation supervisors' language, is called the strict exclusion zone. Life in the zone is not like ordinary living. This is probably not a science that comes within the grasp of ordinary mortals—that of constantly being surrounded by an invisible enemy, to wit radionuclides. You cannot see this enemy, otherwise you would be plagued to death by nightmares (scientists describe this sickness as mass radiation phobia). But nor can you ignore the danger. Although it cannot be seen, it is real and I saw that for myself walking down a village street with a dosimeter.

I stood on the road, switched on the counter, and the screen registered 22 milliroentgens per hour. The contamination doubled when I stepped to the side, to the edge of the road where the grass was a bright green. I went into a house. There was a tidy stack of firewood, each log lying down and, I noticed, carefully cleaned of bark. The reading was 25 milliroentgens per hour. And 35 at the haystack. We shoved the instrument in the stove where there was still a pile of cold ashes and a small nuclear reactor was raging there—175 milliroentgens per hour! And at work in the forest where Vasiliy Semenovich spends the bulk of his time there are places where the contamination exceeds 1,000 milliroentgens per hour.

But people have learned to live cheek by jowl with the deadly enemy. They have learned to gather firewood, stoke a Russian stove, cultivate clean hay, and pick forest berries. Cows, hens, and hogs have returned to the peasant's house. Women are having children. Men are growing rye and guarding the forests. Since the times of the invasion of Batyy [13th-century Mongol invader of Eastern Europe] our remarkable Russian people have learned to rebuild their lives out of the ashes and they not only scorn warmongering but are able to pick themselves up and protect themselves from any attack—be it the serfdom of the czars, collectivization, Stalinism, or nuclear explosion.... Bryansk forestry officials from the strict exclusion zone remind me of a guard who was posted in the past and then people forgot to remove him. But the guard is still on duty.... Since 1990, when it was first permitted to speak of the scale of the Chernobyl disaster and the afflicted Russian rayons, instructions have been formulated which have brought incalculable misfortune to this area.

We can go to extremes. For four years we kept quiet and did nothing, now we have belatedly sounded the alarm. Many villages died in an instant. Whole kolkhozes were wound up. A wall of tall weeds above head height formed in the boundless abandoned fields. Weeds dry as dust enslaved the land in the fall and burst into the abandoned villages. It all threatened to cause a huge conflagration. Fortunately at that time there was no malicious hand, chance cigarette end, or lighted match.

But there was a wise grain grower, Sergey Alekseyevich Belikov, chairman of the "Krasnaya Iput" Kolkhoz, here. Unlike many leadership personnel he did not rush to seek a cozy spot in a clean zone. He began building a new house, telling his fellow villagers that he would stay with them in their troubles. This also determined the choice made by all the other kolkhoz workers. They plowed and sowed not only their own land but also the fields of neighboring farms that had been left to the will of fate. They thus saved their village of Staryye Bobovichy from the fires and began to obtain excellent harvests. Peasant native wit helped them handle the radiation. With the help of a two-tier plow they buried the enemy deep. The level of radiation dropped immediately hundreds of times.

The fate of Bryansk Oblast's southwestern forests turned out differently. In 1986 they took the full force of the Chernobyl nuclear explosion. The green wall that had for centuries acted as Europe's lungs barred the radiation's path. It was here that the lion's share of the thermonuclear fallout landed.

Forestry officials explained the situation to me. The law and official instructions ban any economic or even nature conservation activity in forests where the contamination exceeds 15 curies per square kilometer. Forestry establishment personnel are only entitled to enter this wood if a fire breaks out. Radioactive contamination in the Sofiyevka forest area where Vasiliy Pustovoytov works exceeds 40 curies per square kilometer. This forest is subjected to most rigorous bans. The law is the law but life is always more complex and wiser than legal norms which have, moreover, been adopted in haste and panic.

Forestry experts here have found themselves faced with a choice between the instructions and their conscience. The affected forest, like any living thing, needs man's assistance. The Bryansk forest is very sick, but doctors are not allowed to treat it. You have to wait for fires to start raging. Is that not strange?...

But fires have total free rein now. The felling of trees which are diseased and pose a fire hazard has been prohibited with the result that obstructions have formed and masses of trees have been brought down by the wind. A disease has also appeared which scientists are calling biological fire. This is a root fungus that eats whole areas of forest with the aggressiveness of a locust. Dead trees, impassable areas where trees have been brought down by the wind, and grass dry as dust are what you can see today in the once fine Iput forest area.

"The axe is one cure for the root fungus," I was told by forestry warden V. Tolkachev. In the past timely surgical intervention saved the forests here from disease and fire. Now forestry officials are powerless.

An ordinary overhead fire [verkhovoy ogon] in a healthy forest which has been looked after and divided up into grid squares is terrifying. But a fire blazing in jungles contaminated by radiation is far more terrifying. It happens without fail in the wake of a green fire [zelenyy pozhar]. In the past few years the forest has been enveloped in flames several times with a groan, a crash, and a roar. The neighboring Belorussian [Belarusian] forests have caught fire on several occasions too. Nonetheless forestry officials have so far emerged the victors in this unequal struggle against the elements.

The only GAZ-66 in the whole of the Sofiyevka forest area with 1.5 tonnes of water on board fearlessly rushed into the raging flames and came to the forest's rescue in time. But where do you think the white mushrooms on Mariya Alekseyevna's table came from? Fish splash in the waters here beneath the steep banks of the forest rivers, berries ripen in the sunny glades, and animals multiply. It is only because all this abundance has survived that Mariya Alekseyevna's husband Master Pustovoytov and his comrades in the forest conservation service are living by the laws of their conscience rather than by bureaucratic instructions. These brave people have a hard life. Over the past few years a very strange and incomprehensible—as far as common sense is concerned—hunt has been under way in the forest beyond the Iput. Not for wolves or poachers but for forestry officials. This hunt is carried out by local law-enforcement organs and Boris Pozdnyakov, an inspector from the oblast committee of the forestry workers trade union.

It is not only Master Pustovoytov but also forest warden Tolkachev who has found himself ranked as a criminal. Their crime being that they have violated the bans and restrictions and are secretly helping their sick green friend, clearing areas of forest, organizing fire breaks, and clearing trees that have been brought down by the wind. There are severe penalties for this secret, prohibited activity. Anyone caught red-handed will be fined heavily and, like the other criminals rescuing the forest, dragged off to the courts.

But someone here who has had ties with the Iput area since birth cannot resign himself to what is happening before his eyes in the dying forest. And all of us who perhaps live far from these needy forests should not pretend that the bureaucratic taboo imposed on the oak forests afflicted by Chernobyl puts an end to the problem once and for all, a problem that caused all mankind a headache in 1986.

Fire causes background radiation to increase immediately in this hard-hit area between five and 100 times. Released from their forest prison strontium, plutonium, and cesium once again become a dread winged force.

Let us remember the stack of firewood in the Pustovoytov yard. The firewood itself is ostensibly clean and the radioactive bark has been carefully removed but, once they are in the stove and have been consumed by the fire, the outwardly inoffensive logs turn into radioactive ash. A Russian stove in a peasant's hut is just a miniature thermonuclear reactor. A blazing forest, the largest in this part of Europe, may turn into a nuclear stove which will cause things to hot up for others besides villages lost in the backwoods.

Where does the radioactive dust in the rain land? In Starye Bobovichy or in Moscow, which was saved from contamination in 1986 because the radioactive clouds were seeded over Bryansk and Kaluga Oblasts? Might the uninvited guest, which recognizes no borders, end up on the Champs Elysees or in the outskirts of Geneva tomorrow?

God has spared all of us so far. There has been no great drought, no extensive fires. At the moment few people know of the looming disaster, including specialists from the Ministry for Emergency Situations. But people in the government hardly heed the voice of the scientists today. Chernobyl represents a difficult enough burden for the Russian budget as it is. The program for the rehabilitation and social protection of the afflicted oblasts has been truncated, cut up, and virtually put on ice.

Money is not being provided today even for aerial reconnaissance. Aircraft fire surveillance represents costly expenditure for the budget—even if these forests are blazing no one has as yet got smoke in their eyes. I was told something staggering by forestry officials: There is just one tractor with an air-tight cabin for the whole of this vast forested area. It is totally worn out; the metal is glowing with radiation. But no replacement has been provided. There is no need because it is forbidden to work in the strict exclusion zone.

Common sense suggests that economic activity should be revived here before it is too late. There are mature and overmature forests here. This is a potential forest graveyard, a fire hazard. A model sawmill complex could be set up here. Timber with its bark removed accords with all environmental standards. There would be profits. Forestry establishments would support themselves and hard currency would flow into the budget as before. Forestry officials should not be watching fires but treating the forest, acting as its zealous owners. But today for them even a few tractors—not even Finnish, but our Russian tractors—are an unaffordable dream. And as for timber processing equipment, one complex costs \$400,000.

The state is not being generous here. The money that is so needed here, as in other all-Russia disaster zones, is being spent on magnificent banquets and receptions, "Long Live Russia!" celebrations, and on maintaining the bureaucracy that is growing like a social root fungus and the police apparatus. Millions of dollars were found for the repair of the White House, the former state

Planning Commission building, which the Duma has occupied. Some 0.5 billion rubles have been spent in Bryansk on building four houses for the local ruling elite and the sons of the new elite.

Only there is no money in Bryansk or Moscow to buy a new tractor for the Iput forest. The smoldering fires of the Bryansk forest do not reach the hermetically-sealed government halls in the White House, newly refurbished and securely isolated from the outside world. The zone of authority is deaf and dumb to everything happening in the disaster zone.

We have long since given up relying on foreign aid. We are not the only ones who need that kind of urgent aid today. Maybe, when faced with the next danger comparable in scale and consequences to the explosion at the Chernobyl nuclear reactor in 1986, the world will direct its gaze to the ailing lungs that Europe itself as well as we Russians are using to breathe? The seat of a future fire should be studied and eliminated together. Even if the world is just helping itself this time. In this situation only the old grandfather clock in the forester's house measuring out time can remain unperturbed.

Objection to Establishment of Whale Sanctuary Confirmed

*PY2309151394 Buenos Aires TELAM in Spanish
1446 GMT 21 Sep 94*

[Report by Miguel Grinberg]

[FBIS Translated Text] Buenos Aires, 20 Sep (TELAM-SNI)—Russia today confirmed its decision to object to the recently created Southern Ocean Whale Sanctuary (SOWS). The decision will reopen the area for the commercial fishing of the cetacean.

The decision also reflects objection to the 10-year moratorium on whale fishing signed in May 1993 at the end of the 46th annual meeting of the International Whaling Commission (CBI). This organization tried to prevent the large-scale fishing of the animal.

The sanctuary was also created to protect Antarctic zones that provide 90 percent of the primary food for whales, the largest cetacean.

Russia has thus become the first country to refuse to recognize the moratorium and the sanctuary it voted for together with 22 other countries. Japan was the only country that opposed the decision.

Russia not only approved the SOWS during the CBI meeting in Puerto Vallarta (Mexico) in May 1994, but it also received recognition from the world ecological community for revealing aspects of the former Soviet Union's secret history.

Russian representatives presented data that was previously suppressed on the capture of 88,000 cetaceans by four former Soviet Union factory ships between 1960 and 1980.

The Russian decision will give that country the opportunity to reactivate its whaling fleet, an industry that the CBI agreement tried to neutralize.

Japan was the only country to question the SOWS in Puerto Vallarta. Ecologist groups say the Russian initiative reveals its intention to supply whale meat to the lucrative Japanese market.

Sources close to the CBI suppose that Russia relented to pressures exerted by the Japanese Government Fishing Ministry, which is attempting to resume the commercial fishing of the animal.

Beth Marks, director of the U.S. organization Antarctic Project, said her organization asked the Russian Government to reconsider its decision and "support new initiatives aimed at preserving whales."

"We would prefer to see Russia releasing information on the Soviet Union's black history, that is, revealing facts about the industrial fishing of the cetacean," the ecologist said.

Brazilian national Jose Palazzo, head of the International Wildlife Coalition (IWC), said that "none of this would have been possible without U.S. authorities' approval."

The Clinton administration's policy on whaling is oriented to negotiating solutions for problems that gradually appear instead of applying sanctions unilaterally.

The Antarctic southern ocean zone has been the center of intense whaling activity for most of this century.

The excessive killing of the larger cetaceans pushed most species to the brink of extinction despite the complaints of international ecological groups such as Greenpeace.

The former Soviet Union had one of the largest whaling fleets in the world operating in the Antarctic zone as of the end of World War II, but stopped operating around 1987 "due to technical reasons."

Saratov Oblast Protests Plan for CW Destruction Facility

*MM2609142994 Moscow ROSSIYSKAYA GAZETA
in Russian 22 Sep 94 p 3*

[Report by Oleg Zlobin under the "Ecology" rubric: "Another Nuclear Garbage Dump?"]

[FBIS Translated Text] Saratov—Saratov's ecological public has sounded the alarm. This was prompted by the news that the Russian Government has concluded with the U.S. multinational Raytheon Corporation and the German Luvb [name as transliterated] Concern a contract for the construction of a plant to destroy chemical weapons in Saratov Oblast.

"The draft contract with foreign firms was not agreed with the oblast as a component of the Russian Federation, and this was a mistake on the part of statesmen,"

Professor S. Chetvertkov, chairman of the Saratov branch of the Volga Basin Ecoparlament, believes. "A state ecological expert appraisal was not conducted, and yet the people of Saratov Oblast already have experience in this matter: The former oblast soviet, the administration, and the oblast дума jointly with the Russian Federation Ministry of Defense and with scientists conducted an expert appraisal of two versions of the state 'program for the phased destruction of chemical weapons in the Russian Federation' and set up working groups to select ecologically clean technologies for processing toxins. Special polls of the population resident in places where toxins are stored were conducted. Emphasis was placed on converting toxins into a useful product. For example, lewisite into arsenic, and yperite into thiophene."

The ecologists' concern is perfectly justified, if you consider that Saratov Oblast already has a graveyard for radioactive waste from seven oblasts, the Balakovo Nuclear Electric Power Station, hundreds of square kilometers of soil polluted by cesium-137, and numerous chemical combines on the banks of the Volga. Scientists believe that such projects must definitely provide for a payment to the population for living in ecologically dangerous zones. Criteria for the stability of ecosystems must also be worked out. Procedures and technical means of monitoring must be determined. Russia undoubtedly needs economically advantageous contracts whose implementation does not violate the habitat of Russians. But it is also necessary to have presidential control over compliance with the Russian Federation Constitution, which proclaims the ensuring of ecological safety. This control, in the scientists' opinion, must be employed already at the stage of planning contracts with foreign firms. For the pen is mightier than the sword.

Russian Bioreactor Used To Filter Air

94P60327A Frankfurt/Main FRANKFURTER
ZEITUNG/BLICK DURCH DIE WIRTSCHAFT
in German 14 July 94 p 8

Author not given, "Russian Bioreactor Filters Air"

[FBIS Translated Text] Frankfurt. A technique that up until now has been used to keep the air in Russian submarines pure will very shortly be available on Western markets. These reactors are receptacles that are filled with bacteria. The reactors are supposed to filter volatile organic compounds out of the air. As early as the fall of 1994, such a bioreactor is supposed to go on line at a printing plant in England, reports the NEW SCIENTIST (No 1929 1994, p 25). The British company Innovational Biotechnologies (InBio) has undertaken to represent this filtering technique on behalf of the Moscow Bakh Institute for Biochemistry. According to statements by the Russian researchers, the air filter can be set to capture a number of different impurities. They also claim it can be used in furniture factories, paint factories, and plastics production plants. The main

receptacle is three meters high and two meters wide. Inside are strains of bacteria that are immobilized on manmade fibers. The microorganisms digest the organic compounds and break them down into carbon dioxide and water. According to the British company, up to 98 percent of ethanol, benzene, xylene, phenol, cyclohexane, and other solvents can be removed from the air. To operate, the system requires only cooling water since the bacteria release heat. The system is supposed to be able to filter up to 20,000 cubic meters of air per hour. In Russia one bioreactor based on this principle has been operating for four years without maintenance. The system also offers the advantages of low cost and high efficiency compared to comparable systems, says InBio.

ARMENIA

Rubber Plant's Restart Welcomed Despite Pollution

MM2309153094 Moscow ROSSIYSKIYE VESTI
in Russian 21 Sep 94 p 3

[Report by Valeriy Aydinyan under the "Near Abroad" rubric: "Cost of Clean Air"]

[FBIS Translated Excerpt] Yerevan—[passage omitted] In the past the Armenian Nuclear Electric Power Station and the "Nairit" Science and Production Association were proclaimed the chief threat to the people's very existence. Now the fate of the republic's economy depends on their startup. At present the nuclear station is being intensively prepared for demothballing, and "Nairit" has started producing its chief output—synthetic rubber—for the first time in recent years. This has been achieved thanks to close cooperation with Russia, which has set aside credit of 2 billion rubles for a targeted order. This money has been used to purchase 1,400 tonnes of butadiene. All the rubber obtained will be sent to Russia at prices close to world prices. Specialists maintain that the deal is mutually advantageous. But its significance for Armenia can hardly be overestimated: Hundreds of people will get work, and "Nairit's" recommissioning will revive other enterprises in the chemical complex which are closely linked with it.

A new method of obtaining rubber from natural gas is now ready to be introduced—which will make it possible to avoid costly and dangerous transportation of toxic butadiene.

Armenia is not rich in natural resources, and the commodities in production cannot stand up to competition on the world market. But the chemical industry's output can carve a path into the markets of developed countries which can already afford the luxury of curtailing harmful production processes. So for the time being it will be necessary to wait for clean air.

AZERBAIJAN

World Bank Mission to Check Caspian Biodiversity Program*94WN0422B Baku ZERKALO in Russian 24 Sep 94 p 2*

[Unattributed article: "World Bank and Global Environment Fund Will Help Solve the Caspian's Problems"]

[FBIS Translated Text] A mission of the World Bank and the Global Environment Fund plans to visit Azerbaijan in October for a detailed study of the program, "Protection of the Biological Diversity of the Caspian Sea and Its Shore Zone," which has been developed by the Caspian basin states. The cost of that program, intended to last four years, comes to \$35 million, and its financing is being undertaken by the aforementioned international organizations. As Fikret Dzhaferov, director of the Azerbaijani State Ecology Committee's Department for Planning the Use of Natural Resources, told a correspondent for the KHABAR-SERVIS agency, by the time of the arrival of the World Bank and Global Environment Fund delegation, it is necessary to prepare a final version of the program, name its coordinator, and draw up a republic project for protecting the Caspian environment. The mission will visit all the republics of the Caspian region, and the holding of the Almaty meeting of Caspian states on the problems of the Caspian sea will depend on the decisions it issues.

Chemicals, Radioactive Materials Left by Russian Troops*94WN0422A Baku ZERKALO in Russian 24 Sep 94 pp 1,5*

[Interview with Capt 2nd Rank Idzhran Rustamzade, director of the Azerbaijani Armed Forces' Chemical Service, conducted by staff correspondent N. Medzhidova: "Radiation as a 'Gift' From Russian Forces Who Left Our Territory Two Years Ago"; date and place of interview not given]

[FBIS Translated Text] In 1992 Russian forces left the territory of Azerbaijan. However, the Russian military presence in Azerbaijan remained. Throughout practically the entire territory where military units were stationed, specialists in the Azerbaijani Army's Chemical Service are finding "time bombs" of a sort. Here is what Capt 2nd Rank Idzhran Rustamzade, director of the Azerbaijani Armed Forces' Chemical Service, told a ZERKALO correspondent:

Rustamzade: The commanders of military units were required to transfer all property and military equipment to the republic's jurisdiction. That included—even first and foremost, perhaps—sources of radioactivity. According to the instructions of the USSR Ministry of Defense that were in effect at that time, radioactive substances were classified as being subject to "special accounting," and criminal penalties were provided for any negligence in the control of them. After the Chernobyl disaster, those penalties were even stiffened. But

from every indication, the Russian forces' commanders counted on our ignorance, and the transfer of chemical property and radioactive reference materials was not mentioned in a single weapons transfer-and-receipt document, although every one of those military units had at least one chemical subunit. Those subunits generally worked with radiation monitoring instruments, which included radioactive materials, which were not turned over. I demanded explanations from the commanders of the Russian military units who were leaving the republic, and they assured me that everything would be turned over. In reality, just the opposite occurred.

Medzhidova: But wasn't it possible to check on that?

Rustamzade: The former command of the Azerbaijani Defense Ministry was also interested solely in military hardware, and no one even thought about chemical and radioactive materials. The transfer and receipt of the property being left behind by the Russian military units were carried out in the course of one or two days, and in that amount of time it was virtually impossible to observe all the regulations. And I myself and most of the officers under me had only just arrived from Russia to serve Azerbaijan. We took part in the receipt of the military units' property but did not know their locations. Not until some time later, after carrying out an extensive radiation survey of the territories vacated by the Russian forces, did we start to discover the "gifts."

A year afterwards on the grounds of the Salyany Barracks we discovered a graveyard where radioactive materials, reference materials from a field radiochemical shop, had been discarded and left by the 295th Division, which had been stationed there. On the grounds of an academy, these radioactive materials were located at a spot set aside for a toilet, and you can imagine how many people had been there during the time that had passed!

The maximum radiation level of the materials was 60 rads per hour. That's when the maximum allowable dose for servicemen is five rads a year. Just by entering the toilet, a person received a dose twelvefold greater than the yearly norm. And people were exposed over the course of a year. With the help of medical units we are now trying to figure out what sort of dose the servicemen received. But the consequences may make themselves felt much later.

With great difficulty, we managed to remove those radioactive materials, after which they were turned over to the special Izotop facility (a place for the burial of radioactive waste).

The same sort of reference materials and a bunker containing radioactive waste were found on the grounds of the storage facility for chemical forces' emergency arms stores and protective gear of the notorious 366th Motorized Infantry Regiment, which had been based in Agdam. They had been discarded, and no one had been informed of that fact. The maximum radiation level from that source was 54 rads per hour.

The central chemical storage facility of the Transcaucasus Military district had once been located in Akstafinskiy Rayon on the border with Georgia. The Russian regiment for taking fixes on nuclear explosions and a chemical defense battery had been stationed there. There were about 32 storage units there where all of the chemical forces' armaments and protective gear, except for the actual chemical weapons, had been stored. Mutalibov, who was president of Azerbaijan at that time, declared that the republic did not need chemical forces and weapons, after which the chief of the Transcaucasus Military District's Chemical Service, whose headquarters was located in Georgia, ordered for all the hardware, all incendiary weapons and most of the protective gear against chemical attack to be moved there from our territory. Discarded in this same place were reference materials and radioactive materials from test stands for neutron instruments, radiometers and dosimeters, on which radiation monitoring instruments are checked out, in the process of which high-level radiation sources emitting from 65 to 80 rads per hour are used. Everything had been thrown into a pit near the settlement of Soyug-Bulag. People did not even suspect the danger from the spread of radioactivity.

In Nakhichevan we surveyed the territory where a Russian chemical defense battalion had been stationed. Radioactive material from a field radiochemical shop had been thrown right in a pit there. In 10 minutes a person near the pit containing the material could receive radiation that exceeded the allowable annual norm by a factor of 100. We did not manage to remove that material, but we fenced the area off up to the safety zone.

When a fire was being put out on the grounds of a naval dockyard in Baku, once again exactly the same sort of radioactive materials was found that had come from the neutron and radiation monitoring instrument test stands. We have already removed those materials from there.

I have told you only about a few facilities, but there are very many of them. For lack of the required equipment, so far we have managed to determine only part of the radioactive materials left by Russian troop units.

We have entered some of the active radioactive materials on our books, since they are worth more than gold. They have been placed in a central radiochemical laboratory where they are stored in special storage facilities until we put them to use.

Medzhidova: Why don't we lodge our complaints with those military units?

Rustamzade: For that, the Ministry of Defense needs to have an agency that could impose sanctions against those military units for the violation of environmental safety. At this time, there is no such agency, and they remain unpunished.

Medzhidova: Don't you think that all this was planned in advance?

Rustamzade: We have no proof that it was done deliberately, but such instances of damage exist in virtually every military unit.

Medzhidova: When the Metsamor Nuclear Power Station (Armenia) was shut down several years ago, there were rumors to the effect that people wanted to bury radioactive waste from it on the territory of Azerbaijan. What do you know about that?

Rustamzade: I cannot say anything for sure about that nuclear power station. But most likely radioactive waste from Russian nuclear power stations could be buried in Karabakh, and the amount of it is increasing daily. There are also fears that the Armenians will bury radioactive waste and toxic substances on our occupied territories. They could perfectly well use that territory as a graveyard. The situation could become quite threatening: some Western countries that do not want to bury their radioactive waste on their own territory (in order not to have "dead zones") are prepared to pay a lot of money for that.

Medzhidova: But what will happen after that?

Rustamzade: At present we do not have access to those territories and do not know what is going on there, but once they are liberated it will take a great deal of effort, time and money in order to at least find those graveyards. Then it will be impossible to eliminate them on our own and will be necessary to enlist international forces.

So what will be left for us? The widespread birth of deformed children, terrible diseases, and the degradation of generations, the degeneration of the nation, and dead land on which it will be impossible to live for centuries.

Our Information:

According to the results of a survey by the Scientific Committee on the Effects of Atomic Radiation (established by the U.N. General Assembly in 1955 to assess, on a worldwide scale, radiation doses, their effects and the attendant risk; the committee includes major scientists from 20 countries and is one of the more prestigious institutions of its sort in the world), radioactive waste will remain radioactive for millions of years. The problems of burying highly active wastes from nuclear power plants fall under the jurisdiction of the governments of the pertinent countries.

By its very nature, radiation is harmful to life. Small doses of radiation can result in cancer or genetic damage. In large doses, radiation can destroy cells, damage organ tissue, and be the cause of the rapid death of an organism.

Damage caused by large doses of radiation usually manifests itself within several hours or days. Cancers, however, show up many years after radiation exposure—usually no sooner than one or two decades later. And birth defects and other hereditary diseases caused by

damage to the genetic apparatus show up only in the next generation or later generations: these are the children, grandchildren and more distant descendants of a person exposed to radiation. In the group of cancers that strike the population as the result of radiation exposure, leukoses are the most common. They cause the death of human beings, on the average, 10 years after the time of radiation exposure.

GEORGIA

Black Sea States Meet in Tbilisi on Region's Ecology

LD2509181894 Moscow ITAR-TASS in English
1748 GMT 25 Sep 94

[Article by GIA correspondent for TASS]

[FBIS Transcribed Text] Tbilisi September 25 TASS—The countries of the Black Sea Economic Cooperation Organization met in a conference on Sunday to discuss issues related to environmental protection and the use of nature.

The three-day conference in the Georgian capital Tbilisi is attended by delegations from the region's eleven countries, representatives of environmentalist programmes, members of U.N. Commissions, the European Union and other international organizations.

Georgian leader Eduard Shevardnadze sent a greeting message to participants in the forum. He is convinced that a singled and coordinated approach should be developed to protect the environment and to properly use the Black Sea region's natural resources.

KAZAKHSTAN

Supreme Council Ecology Committee Profiled

94WN0421A Almaty SOVETY KAZAKHSTANA
in Russian 27 Sep 94 p 2

[Article by SOVETY KAZAKHSTANA special correspondent Nina Kim: "They Take to Heart the Cause Entrusted to Them"]

[FBIS Translated Text] One could talk at great length about the state of ecology in the republic. The topic is, as journalists put it, "hackneyed," but nevertheless always topical. Therefore, continuing our rubric, we introduce today the Supreme Council's Committee on Ecology and Use of Natural Resources.

Present at one of its meetings, I noted a comforting fact. At a time when parliament deputies are complaining of drowning in empty speeches and long debates in plenary sessions, everything here was laconic and to the point of the issue under consideration.

"It is this way now," Committee Chairman Uzukbay Karamanov replied to my observation. "In the beginning there were both emotions and ambitions. We are all

people of different temperament. But time goes by, and we have 'adjusted' to one another and developed more understanding."

Uzukbay Karamanov is an authoritative man in the republic. In the past he was chairman of the Council of Ministers, then presidential adviser, and later director of the International Foundation for Saving the Aral Sea. One would imagine a man who had generally spent most of his career in executive structures as authoritarian and peremptory, used, as commonly thought, only to giving orders. But according to deputies who work with Uzukbay Karamanovich, it is nothing like this here. All contentious issues are resolved by a vote; there is no segregation between chairman and nonchairmen. There are only deputies elected by the people.

The committee is comprised of 10 persons. All are people in different professions, but they are united by common concern for our present and future.

"The economy today is a priority for us, and this is understandable," says the chairman, "but we have forgotten that the economy is first and foremost the people. Half of the population of Kazakhstan lives in ecologically harmful areas and needs medical help. Our duty is to help them survive in the current difficult situation, to preserve the natural riches. Ecology is the foundation for future generations, which we must take care of now."

At the second session the committee submitted three draft laws: "On the Stock of State Natural Preserves and Specially Protected Natural Territories," "On Radiation-Ecological Safety," and "On Atmospheric Air."

A subcommittee headed by Deputy Committee Chairman Vladimir Gulayev deals with the problems of land, water, and forest resources, and also preserves. By the way, Vladimir Aleksandrovich has been overseeing such things for some time. He is a deputy of the previous Supreme Soviet. For members of the same subcommittee Tatyana Pilat and Anatoliy Ryabtsev this is their first encounter with legislative work, but ecology—let it not sound banal—has become the meaning of their life.

Our newspaper has already written about Tatyana Lvovna more than once. One can only add that she was elected deputy chairman of the CSCE's European Committee on Ecology and Environmental Protection and a member of the Higher Ecological Council of the Russian State Duma. The Eykos ecological company, of which she is president, received a UN certificate for high exploitation quality of equipment and technologies for purification and disinfection of drinking water.

In Kazakhstan the problem of drinking water is a priority. While in the eastern oblasts, through which the Irtysh river flows, the situation is more or less tolerable, in the northern parts the life-giving moisture travels through a 1,500-km group water main. And a lot depends on its condition. Imagine some mishap happening in one link—entire oblasts would be left without

water... A separate topic is the quality of the water we drink. It is far below world standards and treated only to the extent of a fraction of a percentage point. All that is done to it in our country is chlorination or, under the best circumstances, bacteriological and mechanical purification.

"Therefore," says Anatoliy Ryabtsev, "we, at our own initiative, are working together with the State Committee on Water Resources on a draft law on clean drinking water, which should define who protects the water we drink and is responsible for it. It will allow us to allocate money from the budget on the maintenance of group water mains, which for many oblasts in the republic represent the only source of drinking water."

Before being elected to the parliament, Anatoliy Dmitriyevich worked as chairman of the Semipalatinsk Oblast Committee on Water Resources. He had to move around quite a lot. Now he needs more diligence. He has to know how to analyze laws. In this he is helped by the experience of studying at the Academy of Social Sciences in Moscow.

"Since the first day of our work we have been inundated with complaints that the parliament passes imperfect laws," he continued. "But I say: Let us learn at least to comply with 'poor' laws. Yes, they have been contradictory. But is this not why we made the parliament a professional one? Where would a deputy, who in the past came for a week or two to participate in a session, find the time to get into the substance, to compare laws?"

Now our parliament members have plenty of time for this. It is their work. The subcommittee is making changes in laws on the basis of the existing Water Code. They are working on a comprehensive law on environmental protection. Other laws are in the preparatory stage, after which the subcommittees attach their criticisms and proposals and they are sent to the appropriate committees.

This is also being done in order to avoid "overlapping" and inconsistencies, to perfect the laws that are in the works. For instance, in discussing the draft law on transportation in the subcommittee on mineral resources and industrial ecology, whose members are Yuriy Sylov, Viktor Kiyanskiy, and Zhangeldy Myrzagulov, criticisms and proposals came up regarding land allocation for transportation use, ensuring its safety, and protecting the environment and mineral resources by taking into account the local ecological situation. All were incorporated by the parliament when the law was being passed.

Currently the subcommittee has begun working on the law on payment for land use. We now have many enterprises, including foreign and joint, which perform prospecting and extraction of valuable minerals. One of

the main goals of this law is to attract capital for the development of existing and newly discovered deposits. And, of course, local ecology will not be forgotten under any circumstances.

The subcommittee on radiation ecology and zones of extreme distress consists of Ivan Chasnikov, Olzhas Suleymenov, and Miloslav Kozlovskiy.

The Semipalatinsk test site is Kazakhstan's sore spot. That is why the name of writer Olzhas Suleymenov, leader and organizer of the Nevada-Semipalatinsk movement, is so revered and respected not only in our country but in the entire world. Ivan Chasnikov is his confederate, a professional in radiation issues. He used to be director of the Institute of Nuclear and High Energy Physics. Therefore he knows like no one else not only the pluses of our nuclear technology, but also its terrible consequences.

"During the parliamentary vacation I visited the test site," says Ivan Yakovlevich. "The picture is depressing, horrible. Elders bury their children and grandchildren. These are the consequences of the tests. Radiation shows up to a great extent in subsequent generations. Children are like a litmus test—they are very sensitive to various ecological anomalies. And it is horrible when a child dies. I came to the parliament to protect the rights of people—victims of nuclear tests. We in Semipalatinsk were not the only ones harmed. The consequences of the Chernobyl disaster, tests in China's Lob Nor and Chelyabinsk Oblast also are being felt... We need a new law on radiation safety, which will work for everyone harmed by radiation. Because we also have a uranium industry, and more than 1,000 sources of radiation for which nobody has responsibility have been discovered in the republic..."

The subcommittee is currently working on changes to the law on social protection of citizens harmed as a consequence of nuclear tests at the Semipalatinsk test site. Medical studies showed that there are many radiation-affected regions in Kazakhstan, but because of the "modest" data provided by the military they do not figure anywhere. Changes must put everything in its proper place.

People in the Committee on Ecology and Use of Natural Resources realize that not all the draft laws they are working on will be adopted this year. The pressure of economic adversity in the republic is just too great. We have to deal with this first. Nevertheless, people are waiting for "ecological" laws no less impatiently than for economic ones.

Visiting the committee and meeting with the deputies representing it, I found that the people who work here feel for their voters and are putting their hearts into the endeavor entrusted to them.

UKRAINE

Military Air Crashes Impact Environment

94WN0403A Kiev ZELENYY SVIT in Russian Special Edition, (Unknown Pub Date) pp 8-9

[Unattributed article: "Earth, I Am Accompanying My Charges"]

[FBIS Translated Text] Did we fight for disarmament in words or in deed? For our own—in words, for others'—in deed.

The 1960's. Several military pilots perished when testing the much vaunted Soviet MIA-4 "Bison" intercontinental bomber.

1976. A Soviet combat aircraft crashed into a passenger bus near Vladivostok. Casualties—10 people.

1976. A Soviet strategic bomber performing alert duty and carrying nuclear weapons fell into the Sea of Okhotsk. The American submarine "Grayback" came to the bomber and stole two nuclear bombs from the seabed.

5 August 1976. A Soviet military reconnaissance aircraft returning from Cuba fell into the ocean near Newfoundland. The crew did not return.

24 December 1983. Our bomber broke up in the north-eastern part of the GDR. Both pilots died of injuries.

April 1984. A Soviet military aircraft crashed. Major-General A. Fedotov and flight engineer V. Zaytsev perished.

28 October 1984. A red-star jet assault-transport aircraft, which took off from the Kabul airfield, crashed immediately after takeoff. We lost 240 young men.

January 1985. A Soviet military aircraft, piloted by Colonel V. Tukkhvatulin, crashed near a heavily populated area in the USSR. Five pilots perished.

18 February 1985. A Soviet TU-95 nuclear bomber had an engine failure near Cam Ranh Bay, Vietnam. Six people died.

16 May 1985. A Soviet military helicopter sank in the vicinity of Sakhalin. None of the crew were rescued.

7 July 1985. A Soviet SU-15 military aircraft crashed into the Baltic Sea off the shores of Sweden.

21 July 1985. Our YAK-36 fighter crashed in the Norwegian Sea.

Spring 1986. A USSR IL-76 transport aircraft burned up on the ground. Laser weapons were being tested inside it.

1989. A military transport aircraft crashed near Semenovka, Chernyov Oblast. A large amount of military equipment and soldiers were sent to the crash site to comb the terrain. Radiation meter operators summoned from Kiev detected in the vicinity of the crash the presence of low-intensity radioactivity, the energy spectrum of which

pointed to Uranium-238. The official version is that the aircraft fell together with "ground-air" charges. The unofficial version is that there was something nuclear in it.

20 October 1991. A Soviet military transport helicopter crashed 30 km from Petropavlovsk-Kamchatskiy. The MI-8 blew up on impact with the ground and burned all day long. The crew was barely saved.

Mid-November 1991. A USSR Air Forces AN-12 military transport aircraft crashed in the Arctic, near the village of Amderma. Twenty-six people died.

January 1992. A MIG-31 aircraft crashed at the military airfield of Yemozovo (Kamchatka). The crew perished.

Spring 1992. There were several more military aviation disasters in CIS countries.

August 1992. A Belorussian strategic bomber crashed several kilometers from Gomel.

These, naturally, are only a small part of all the Soviet military disasters known about in the West. Complete statistics were carefully hidden from our own people by the USSR Ministry of Defense and the USSR Glavlit [Main Administration for the Safeguarding of Military and State Secrets in the Press], which since the 1950's banned information about accidents and disasters in the USSR Armed Forces.

The majority of the above accidents, which resulted not only in the death of pilots but also totally innocent Soviet people, as follows from western sources, occurred due to a general carelessness in the military, the cursed habit of economizing on "small things," and a general "hush-hush" attitude. Like in the anecdote: "What, the vehicle won't start? Let's go, you can start it later!" It is no wonder that for reasons of incomplete work, in the last 20 years the so-called mean time between helicopter accidents decreased from 107,000 to 54,000 hours, and for fighters to 8-10,000 flight hours. The damage just to equipment and personnel of the Air Forces is estimated at hundreds of millions of rubles annually, and if you add here civilian property and the environment, military aircraft accidents are costing billions in the CIS countries.

When it was no longer possible to hide some tragedy from the public, those who died were buried with great honors and given awards posthumously.

I remember, Vera Bunina wrote in her diary that we "always were able to bury better under all regimes. Is this a symbol of our country?"

Those responsible for the disasters of the USSR Ministry of Defense were never punished. And that is why the military aircraft continue to crash. It is our own fault.

It is no secret to anyone that cosmonautics, on which the bulk of human lives, the best minds, and trillions of rubles have been sacrificed, is basically a military endeavor. And it is leading to an exacerbation of ecological problems. The point is not that they have turned space into a garbage can or even that to this time there is

no maximum permissible concentrations for the discharge of jet fuel combustion products along the flight path of a launch vehicle in the former USSR.

Experts warn that there is no point in rejoicing over new launches of spacecraft. You see, every time we or the United States put another cosmonaut into space, there are unexpected droughts, typhoons, and earthquakes.

The American Saturn-5 vehicles and Space Shuttles, each weighing 2,650 tonnes, are launched in that active zone where, as we all known from school, the warm current Gulf Stream originates and cyclones appear. Several days after a spacecraft takes off, cyclones attack the southeastern United States, causing bad weather. If the Space Shuttles sleep, Europe is not threatened with droughts and heat waves. Our "Protons" and "Energias" are launched, and there are downpours and hailstorms in Ukraine and Stavropol.

Eighteen powerful, including five super-powerful, earthquakes have occurred recently one month after Space Shuttle launches. The Spitak earthquake happened 22 days after the launch of the "Buran" with the "Energiya" launch vehicle from Baykonur. Nothing on earth takes place without a trace...

But we continue and continue to bang at the crystal dome of the universe with military sledgehammers. We will saturate everything with the prestigious and stupid game of "cosmonautics." The time to question the rights to launch space rockets is long overdue. Parts of launch vehicles and spacecraft falling to the earth pose a great danger. Quite a few of them, often stuffed with radiation, are scattered around the expanses of Kazakhstan, Siberia, and the North. Several the size of a single-story house fell in the Altay Preserve. Their fragments have littered reindeer pastures in the North and crippling the legs of animals. Before, large "objects" were exploded, and a special team flew in; now that has stopped. Under Gorbachev, they say, 215 points were cleaned up in three months, and the Main Administration for Space and its imitators had no more funds for this.

In Kazakhstan in the late 1980's, local authorities filed a suit against the rocket launchers for 1.7 million rubles in damages as compensation for the value of crops lost on lands occupied by the "rocket parts." In 1989, the space administration promised to remove from the territory of Kazakhstan 890 whole and unexploded stages of multi-ton rockets; however, they did not follow through on their promises.

Military Airbase Environment Damage Viewed

94WN0402A Kiev ZELENYY SVIT in Russian Special Edition, (Unknown Pub Date) pp 5-8

[Unattributed article: "It Is Not Beer that Is Killing People..."]

[FBIS Translated Text] Save the men! Especially those who live near military airfields. In Lutsk, Mukachevo, Belaya Tserkov, Stry...

Americans have calculated that due to the constant powerful drone, 5-10 percent of the adult male population of small towns adjacent to military airfields suffer from impotence already after three years of living together with bombers. At Lutsk and Mukachevo, the roar of combat aircraft is 2.5 times the norm, reaching 120 decibels, the level at which a human cell cannot endure.

Airliners, particularly military ones, are one of the most greedy consumers of oxygen, counted in kilograms per second. The State Motor Vehicle Inspectorate severely fines motor vehicle operators for grams of exhaust gas, but no one punishes military pilots for the tonnes of soot spread over the clouds.

Have you noticed what kind of land is chosen for military airfields? The most fertile, black-earth land. Not only do fighters and ground attack aircraft feel good on these lands, but a pretty good crop is also raised. Enterprising officers, like at Yeysk, have begun leasing part of their "secret" airfields to local peasants, the same ones from whom they once took this land.

The dense fog did not hide the beauty. The colonnade "Ekho." The Turkish cottage. Eighteenth century. Late classicism. The Chinese footbridge. The mountain. The 1,300 types of grasses and trees. Pestel carefully thought out the uprising plan here. Pushkin exchanged pleasantries with Countess Branitskaya. And here is the "Lion" fountain. The water in it reeks of naphthalene—it is next to a rocket fuel base. There is a ravine at Orekhovaya Glade. The spring—not green "tarragon"—is a solution of hexavalent chromium, lead, and cadmium. Since 1979. It is more than 400 times the maximum permissible concentration. So, adjacent to it is a military aircraft repair plant. A little higher up are more springs. They are burning, like in 1941, day and night, since kerosene and polychlorobiphenyls, prohibited in virtually all countries, are flowing out. The same picture is seen one kilometer along the bank of the Ros Stream. Everything is clear—that is the way a military airfield is. This history goes back to 1959. At that time the Belaya Tserkov Aircraft Repair Plant (military unit 13845), which was commanded by someone named I.A. Kovalenko, forced its peaceful neighbor, the director's office of the "Aleksandriya" Park, to agree to a unique project. The military decided to construct a storm sewer and to make it drain into the park's lake and from there further into the Ros. They began to dig the trenches and destroyed a lot of old trees. But when botanists realized that the storm sewer did not yet have any purification plant, they sounded the alarm. But neither the then-chairman of the Belaya Tserkov City Executive Committee, M.I. Sribnyak, nor clerks from the Council of Ministers helped them (TsGAOR [Central State Archives of the October Revolution] of Ukraine, f. 2, op. 10, d. 2111, ll. 4-4ob).

Remember the anecdote:

Comrade Warrant Officer, stop the train!

Train, stop! One, two!

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An attempt is also being made today according to the hard Army principle of "one-two" to protect the world masterpiece—the "Aleksandriya" Park. Soldiers brought in two rusty pieces of iron—this is called an "oil trap." Near the spring with the "tarragon" is riveted a tin "chest" for converting hexavalent chromium into trivalent chromium. The "chest" rusted through and fell apart.

TU-95 nuclear bombers are repaired at the aircraft repair plant. They do not fit in the hangars. Therefore, they tend to them right on the ground. Girls and young women dressed in protective coveralls bathe the aircraft in oxalic acid. It all flows down onto the grass.

The military airfield where the aging TU-16 bombers are "grazing" is some distance away. We also visited it. The "fliers" always had an abundance of aviation fuel. The motherland is generously singing now, too. They fill the tanks, a valve is jammed, and fuel splashes on the ground. An unscheduled landing, and they have to get rid of excess weight—they begin with the kerosene. Incidentally, this is complex kerosene with the addition of the clever liquid "I"—a most powerful poison. The "Greens" from Estonia said in order to conceal incomplete aircraft sorties, pilots sometimes dump fuel into special wells or, as at the military airfield near the city of Vasilkov, into a ditch.

Or it happens like this. Personnel roll up at night with tanks. They pump it into the airfield's reservoirs. Of course, there are no restriction sensors. They were stolen. A soldier has a head in order to think and brains in order to figure things out. He spit into the half-empty tank in order to check if he could pump much more. They had flown for along time. He went to sleep. He slept through the overflow. It is mandatory to jam the slides in the reservoir. They communicated with the station that kerosene had been spilled on the ground. The number of such spills cannot be counted. If a commission were to arrive suddenly, it would be with the assignment to investigate and report that there were no violations.

The fuel is carried to the garrison, which is in the village of Desna, Kozeletskiy Rayon, Chernigov Oblast, over the Desna and then by pipe. Oil covers all the meadows and recently spilled quite a lot into the lake where the whole village goes swimming. However, what did the local general do before this?

In the small town of Dubno, TS-1 aviation kerosene has been spilling into 30 wells since the 1970's. Geologists say that by 1989, 36,000 cubic meters of fuel have gone into the ground from the military airfield, at a cost of 2 million rubles. Who says that there is a tense situation with fuel in Ukraine?

And here one of the main parties responsible for this "abundance"—the fuel service chief of the Carpathian Military District, Major-General S. Kulikov, emerged unscathed from the kerosene. For he was discharged into the reserve in time. Therefore, the procurator of that

same military district, N. Nikishkin, was unable to bring him to account... "due to the lack of a crime." Since Kulikov is not in the service, there is no crime. But the kerosene is splashing in the wells.

Another variant is that the pipeline through which fuel is pumped from the station to the fuel depots is full of holes. It is tens of kilometers long. Local residents, like in Dubno, have been siphoning, and in tens of years have picked 200 holes. Corrosion is causing a problem. Or a transport pinches a tank, for example. The rubber reservoir breaks, and the valves leak.

The "Greens" from Estonia, who were the first in the former USSR to oppose the "Soviet military threat," said that one-third of their wells near the small town of Tapa have kerosene. At Pyarnu, in December 1989, tonnes of fuel from the military airfield went into the river of the same name. The program "Vremya" took a picture, but was afraid to show it. At Mozdok, which is in Northern Ossetia, military pilots there paid out 6.5 million rubles for such "games" with aviation fuel.

In the late 1970's and early 1980's, the USSR Ministry of Defense began implementing a grandiose and expensive classified program to create stockpiles of aviation fuel underground in natural capacities created specially for this in salt-copal structures, following the example of the United States; however, as is often the case in our country, it was done in haste without expert economic examination. In Ukraine, in a situation of absolute secrecy and in violation of environmental protection legislation, they constructed three such underground fuel depots for underground purposes. In the Carpathians, in the vicinity of Solotvino, and two in the vicinity of Poltava—near Mirgorod and at Lubny. Hundreds of thousands of tonnes of oil have been pumped into each storage facility. But the one at Solotvino turned out to be in a dangerous seismic zone, and the structure and intervals were incorrectly selected for the Mirgorod one. Now, the smell of oil has appeared in some wells under Mirgorod—has the fuel penetrated through cracks and pores in the salt layer to pollute the underground waters?

Indeed, we all know about aircraft. Tanks cause just as many problems. They are unduly familiar gunners—they are not attached to the airfield. How many times has it happened: by mistake or while drunk they put in gas (one tonne in each tank), but do not have time to adjust the tank fuel system. Therefore, you give diesel fuel, and the gas goes on the ground.

"The composition of the earth does not know dirt," wrote Pasternak.

It knows! Next to the TU-95 nuclear bomber base, which is in Uzin, Kiev Oblast (whose commander, General Bashkirov, was accepted as a member of the Ukrainian Cossacks in the summer of 1992), neighboring wells already have a 20-cm layer of oil. Thus, fliers have hung a lock on some of these and, they say, are secretly trading in fuel.

What about our valiant environmental control?

It is not sleeping. Soldiers from the Kiev Oblast Committee for Environmental Protection arrived in Uzin at the airfield, and kerosene was already splashing in the ditches there.

Competition between experts and local pilots has been organized.

"This is kerosene," the environmental protection people insist.

"No, it's water," the fliers maintain.

They argued, had a few drinks, and called a fire engine: "Abdulla, set it afire!" It blazed—as soon as the trousers were protected. It took the firefighters a long time to extinguish it. What if nuclear munitions had started? There is no control better than a fool's control.

Aviation kerosene filters four times better than water; clay, a reliable sort of water-resistant layer, does not hold it. Therefore, in all the places in Ukraine where 880 bombers, fighters, ground attack aircraft and other silver birds were sheltered—and there are more than 100 such airfields—underground waters have been contaminated. If you wish to check it out—go to Kramatorsk and Mariupol, Donetsk Oblast; Dubno, Rovno Oblast; Lutsk, Uzin, Belaya Tserkov, Vasilkov, Borispol, and Zhulyany, Kiev Oblast; Mukachevo, Transcarpathian Oblast; Ovruch and Ozeroye, Zhitomir Oblast; Kharkov, Ivano-Frankovsk, Poltava, and Chertkov, Ternopol Oblast; Uman, Rotmistrovka, and Velikaya Sevastyanovka, and Khristinovskiy Rayon, Cherkassy Oblast; Babek, Kachu, Kerch, Veselov, and Saki, Crimean Republic; Chernigov, Chervonoza-menka and Artsyz, Odessa Oblast; Kodaki and Novomoskovsk, Dnepropetrovsk Oblast; Mokroye, Zaporozhye Oblast; Lvov and Stryi, Lvov Oblast; Priluki, Chernigov Oblast; and Zhovtnevoye of Grebenkovskiy Rayon and Velika Krucha of Piryatinskii Rayon, Poltava Oblast. In 1993, the Ministry for Environmental Protection of Ukraine checked 100 military airfields in all oblasts of Ukraine—all were contaminated with kerosene.

So, it is not just in Ukraine or in the former USSR. The Soviet Army has left Germany and left behind ground waters terribly contaminated with fuel. They dumped 50,000 tonnes of kerosene into the lake in the vicinity of Mecklenburg. In Frenshat, Czechoslovakia, where Soviet troops repaired their tanks, ground waters are so contaminated that you can "practically get diesel fuel their," said the deputy minister of the environment, Yaroslav Vlcek. The Soviet Army contaminated or destroyed about 7,000 square kilometers, which is about 6 percent of the territory of the former Czechoslovakia.

In Swinoujscie, the site of the largest Soviet naval base in Poland, it was discovered that the ground waters have been contaminated with fuel and that the sewage from the Chojna airfield has been flowing directly into the Rurzyzna River.

In the former East Germany, at least 90 sites where Soviet troops were stationed are seriously polluted. In all, about 10 percent of East German territory is polluted.

There is kerosene under ground. There is kerosene in the wells. There is kerosene in the springs. Ecological crimes acquiring a universal nature are ceasing to be crimes and becoming a standard of life.

Sometimes kerosene is poured onto the ground so as not to pay for a simple tank. Sometimes the seams of reservoirs come apart due to constant vibrations. This is what happened in Uman at a fuel depot. They can be repaired, but unit commanders, as a rule, change every 3-4 years, pushing aside concerns about "equipment" to the future successor.

Attention, reader! We will now tell you about a special crime of the Soviet Army.

It is in Uman, Cherkassy Oblast, at a military training airfield. At a fuel depot, there are three 1,000-cubic meter underground reservoirs whose seams came apart. The kerosene gushed out into the ravine of the Sukhoy Yar. It is a sadly famous ravine where the fascists destroyed 20,000 Jews. As in Kiev and Babiy Yar, the people were thrown against the slopes and shot. For a long time, it was customary not to speak about the fascists' atrocities in Soviet Uman.

But the kerosene flowed along the ravine. In order to hide the traces of the ecological crime, the guilty parties decided on a greater crime—they set fire to the ravine. For a long time the flame persistently licked at the remains of the executed Jews at the memorial to the victims of fascism.

"Sacrilege"—"the condemnation or denial of something sacred, and profanation, desecration, blasphemy." V. Dal., *"Tolkovyy slovar zhivogo velikorusskogo yazyka"* [The Defining Dictionary of the Living Great Russian Language].

He wrote that laws punished more severely for such a crime than for simple theft or other crimes. Before.

Guilty parties were punished in this way in this incident:

EXCERPT from military unit 55127

No. 50/0344, 10 May 1989

I order:

- 2) To strictly point out to the chief of the Cherkassy Higher Military Aviation School for Pilots, Major-General of Aviation v.R. Kuzyuberdin, the insufficient monitoring of the condition of the fuel depots and for low exactingness of subordinate officials for fulfilling environmental protection measures.
- 3) To reprimand the commander of military unit 54981, Lieutenant Colonel A.I. Smirnyagin, for failure to take timely measures for environmental protection of the ground and ground waters against contamination by petroleum products.

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- 4) *To severely reprimand the chief of the fuel service of military unit 54981, Lieutenant D.B. Uvarovskiy, for failure to fulfill his official duties for conducting environmental protection measures at the fuel depots.*

Commander of military unit 55127

Lieutenant-General of Aviation N.P. Kryukov.

If we could make nails out of these people, there would not be any stronger nails in the world.

Seas Serve As Naval Toxic Dumping Grounds

94WN0404A Kiev ZELENYY SVIT in Russian Special Edition, (Unknown Pub Date) pp 9-10

[Unattributed article: "The Black Days of the Black Sea: Sailors Were Smoking Cigarettes On Deck"]

[FBIS Translated Text] And they were tossing cigarette butts into the sea. And not only cigarette butts.

At approximately 1 a.m. on September 29, 1955, a powerful explosion resounded in the bottom of the Battleship "Novorossiysk." Eight decks, three of them armored, were pierced. The battleship split in two, capsized and sank. According to incomplete data, more than 600 (!) seamen perished. The catastrophe occurred near Sevastopol, in Severnaya Bukhta [North Bay], 200 meters from the Naval Hospital sea front. The commission that arrived could not establish the cause of the tragedy but strictly prohibited any mention of the catastrophe.

The last year for a Soviet "Kresta" Class cruiser that burned in the North Sea turned out to be 1974. Four hundred fifty souls were lost. A small missile ship blew up in April 1987. Thirty nine seamen died. On 12 February 1988, the American military ships "Yorktown" and "Caron" collided with a Soviet destroyer and frigate in the Black Sea, nine miles from the coast of the Crimean Peninsula. The consequences are unknown.

Tragedies on Soviet surface combatants are a normal occurrence. They always simply hid them. The Large Antisubmarine Warfare Ship "Admiral Zakharev's" aft engine started with a jerk in the winter of 1991 near Vladivostok. The fire raged for 31 hours. The Large Antisubmarine Warfare Ship "Otvazhnyy" sank on August 30, 1974 in the Black Sea near Sevastopol. An explosion occurred in a powder magazine. The fire did not permit rescue ships to get close to the ship. According to certain data, hundreds of the 600 seamen onboard died. A Soviet nuclear submarine went to the ocean bottom approximately in the 1970's. And the Helicopter Carrier "Moskva" caught fire several times. The first time in 1971-1972 and a second time in 1989. And it torpedoed itself in 1969. Thank God, the torpedo did not detonate. A total of up to 200 serious accidents occurred in the Soviet Navy from 1945 through 1989.

And see how the Black Sea Fleet is continuing these pernicious traditions in the 1990's. A fire broke out on the Large Antisubmarine Warfare Ship "Ochakov" on

February 9, 1993. The fire caused multi-million rubles in damage. On February 14, 1993, an explosion thundered on the Black Sea Fleet Small Missile Ship "Mirazh." A Naval officer died.

But if the loss and damage of Soviet surface combatants (77 incidents are known from 1945 through 1988) is often explained by generally slipshod conditions and the unreliability of Soviet military equipment and also chance, the burial of munitions on the ocean bottom is being purposefully conducted and is acquiring the status of a crime against the people and against nature.

Until 1989, the USSR Ministry of Defense issued a secret circular that authorized the disposal of munitions at sea. Chemical munitions were hauled from Arkhangelsk Oblast's Obozerskaya Station to Severodvinsk from February through March 1956. Based upon Marshal Malinovskiy's suggestion, they were unloaded and sunk in the White Sea. A year later, munitions were dumped in the area of Spitzbergen Island. In 1960-1961, trains with 1939-era 100, 250, and 500 kilogram bombs traveled from Saratov Oblast to Pechenga. The bombs were filled with sarin, uperite [mustard gas] and lizit [not found]. Then Murmansk Merchant Fleet ships, leased by the USSR Ministry of Defense, transported the chemical weapons to the Novaya Zemlya area and dumped them. A total of 183 train-loads of chemical munitions were transported from Pechenga.

The metal casings rusted through for 40 years. The chemicals, like that genie, are being released from the bottle. Starfish were the first to sense that. Six million of them have been discarded on the coast of Dvina Gulf alone. Then—people: According to data of President B. Yeltsin's former Ecological Advisor, Russian Academy of Sciences Corresponding-Member A. Yablokov, the mortality rate of people around Arkhangelsk increased by 10 percent in 1991.

From 100,000 to 300,000 tonnes of toxic substances—sarin and mustard gas—lie on the bottom of the Baltic Sea. Soviet seamen began to dump canisters and munitions from the end of the 1940's through 1965, primarily near Kristanse Island and 56 miles southwest of the city of Liyepaya at a depth of only several dozen meters in a broad 780 square kilometer water area.

One thimbleful of uperite dumped in 50 cubic meters of sea water is capable of killing a horse. Experts predict: God forbid that the gas finds its way out of the rusty bombs and projectiles—the poisonous mixture will be quite enough to kill four seas like the Baltic. The danger threatens 30 million people who live around the Baltic. The "storage period" of the munitions is nearing an end. There are 10 years left. We already have the first victims. Approximately 100 Danish fishermen have become disabled, having caught several old chemical projectiles in their nets. The same thing happened with Klaypeda fishermen. Who is next? The sea frequently throws pieces of yellow phosphorous up onto the beaches. Pray God you don't pick up a piece of it, taking it for amber.

The Barents and Kara Seas also ended up in the field of view of Soviet strategists. They were ordered to dump nuclear wastes from nuclear submarines there. They loaded canisters with liquid and solid nuclear "garbage" on those same Murmansk Merchant Fleet ships, they dumped them into the sea and later, if the canisters did not wish to sink, they fired at them with automatic weapons. The "expired" engine from the nuclear-powered ship "Lenin" also found its final resting place somewhere alongside.

According to Greenpeace data, there are tens of thousands of barrels with radioactive substances in the Novaya Zemlya area and the Soviet Northern Fleet annually dumped tens of thousand of cubic meters of liquid and two thousand cubic meters of solid wastes with varying degrees of radiation into the sea. According to various sources, from 13 to 20 Soviet reactors, some of which still contain nuclear fuel, were dumped in the Kara Sea. The total contamination of the northern seas by the Soviet Union is assessed at 2.2-3.2 million Curies which is two to four times more damage than has been inflicted to the Atlantic by the Western countries.

IZVESTIYA recently reported that Soviet seamen dumped uperite, that had arrived at military bases in an unserviceable condition, in the Sea of Japan near Vladivostok at a depth of one kilometer in May 1941.

The city of Kerch's railway combine loaded the ship "Tsezar Kunikov" (ship owner—military unit 49304 from Yevpatoriya) at Kamysh-Burunskiy Port on October 9, 1990. The cargo was munitions that had become unserviceable. What kind—nuclear, bacteriological, conventional, chemical? We don't know. For now. The weapons were loaded onto the ship from one of Kerch's military depots in accordance with a Black Sea Fleet Technical Directorate order. An environmental protection inspection team butted in and they showed it the door. The cargo was dumped in the Black Sea at a depth of two kilometers. And, according to certain data, they operated like that more than once. This could take a turn for the worse—as they say in the army...

"It is impossible to do something about that which has already occurred," noted the ancient Philosopher Feognid. But we can still investigate what was dumped, punish the guilty, stop similar crimes in the future, and salvage munitions from the bottom of the sea and disarm them. However, the leadership of the former Ukrainian SSR's State Environmental Protection Committee: Chairman V. Filonenko, First Deputy—I. Lyakh, Main Water Protection Staff Chief V. Cherednichenko—didn't take any serious steps whatsoever. They didn't create an investigatory committee and they did not report it either to the government or to the press. They only wrote letter number 11-6 dated February 26 1991 to Moscow, to USSR State Environmental Protection Committee Deputy Chairman V. Kostin. But the next reorganization was occurring there and an answer did not arrive in Kiev (Black Sea Fleet Commander-in-Chief

Admiral Kasatonov later officially explained that the burial of conventional munitions had actually occurred at quadrant 73-73 without the sanction of the environmental protection services).

According to data of the Sevastopol newspaper OSTROV KRYM, Commander-in-Chief F. Oktyabrskiy ordered Soviet seamen to bury "military toxic substances", primarily uperite, in the Black Sea in the area of Kazachya Bay at a depth of up to 50 meters at the end of June 1942.

The terrible genie has hidden at the bottom of the Black Sea. He "will appear" in the Baltic and White Seas in 10 years. How long will Ukraine wait?

Black Sea Fleet Pollution of Seas Detailed

94WN0407A Kiev ZELENYY SVIT in Russian Special Edition, (Unknown Pub Date) pp 11-12

[Unattributed article, under the rubric: "Stop, They Are Firing!": "How One Admiral Frightened Three Ministers"]

[FBIS Translated Text] Once Podgornyy visited a submarine in the Northern Fleet and wrote in the ship's log: "I was here. It made an enormous impression. Nikolay Podgornyy." But it would have "made" an even greater impression if he had found himself at the Black Sea Fleet's main base.

Sevastopol Bay. Seven thousand cubic meters of polluted water and 10 tonnes of oil stream out of military facilities every day. The damage totals 328,000 rubles in 1991 prices. Ten major oil spills occurred in the middle 1980's. R211,000 was awarded. R1 million was awarded in 1990. The pollution of Sevastopol Bay is 30-100 times higher than the standard. And in June 1988—2,000 times higher! Add to that the dozens of military surface ships and submarines that are half sunk and rusting here.

The fleet's fuel base is at Inkerman. Who said that there is an oil shortage in Ukraine? There is a real oil field here, a bewitching lake that is as large as Ploshchad Nezavisimosti [Independence Square]. Yes and there is a hundred times more oil under the ground.

But where did the fuel come from? Initially, the seamen cited the Romans who were allegedly splashed with Greek fire here during the Second Punic War. Then they "sicked the dogs" on the Fascists, they said that the Fascists were the guilty rats. It turned out to be even more transparent. In the 1970's, some simpleton thought up the idea of dumping oil in the galleries of former mountain excavations. It was cheap and practical. They say that he also got his hands on an award. And with time the galleries cracked and the oil poured into the sea.

And that's not all. The question is being examined on transforming Sevastopol Bay into an oil sales transfer facility with rich foreign uncles. And they are contemplating polluting with oil not only the bay but also Lake

Donuzlav. The ship cemetery in the once flourishing bays and the pollution of the sea with petroleum products are an everyday matter for the Navy.

The base at Inkerman has been polluting the sea since 1904 and especially since the middle 1950's. But the environmental protection organs only got p73 wind of it in the middle 1980's. Incidentally, that is why the well-known January 16, 1976 Central Committee and USSR Council of Ministers Decree No 42 "On Measures for the Prevention of the Pollution of the Black Sea and Sea of Azov" was nipped in the bud.

March 26, 1989. The Auxiliary Military Ship "Vasiliy Golovin", having sailed from Artbukhta, shamefully dumped bilge waters which tourists noted and reported to the State Inspectorate for the Protection of the Black Sea. Ecologists became convinced—24 kilograms were dumped. The damage was R5,000. However, the military did not permit them on the ship, having themselves drafted a document stating that the "Vasiliy Golovin" had not polluted the sea. And they waved it in front of the ecologists' noses: Boys, take your fine and ...

The beginning of 1992. The beautiful Cruiser "Moskva" dumped fuel into the sea, so much in fact that the oil did not disperse as a film but as a wave. But they once again did not permit anyone to inspect: the curtain of "secrecy" has still not been raised even once. And the military procuracy is not doing anything. Its full title is—Black Sea Fleet Military Procuracy—who "wants to be a bull in a china shop". Ukrainian Environmental Minister Yu. Shcherbak will send the Black Sea Fleet Commander angry telegrams and the "old salt" will pay him no heed.

The state has spent quite a bit of money to create special waste accumulators in the bellies of military ships but the mighty Black Sea Fleet has practically no garbage collecting ships. Throughout the world, ships dump leftover oil in ship collectors but the admirals also have problems with them. The seamen have one solution—dump it into the "beachcomber".

And practically every military ship conducts itself that way. And there are quite a few of them in the Black Sea Fleet: 45 large ones, 300 medium and small ones, 28 submarines, 151 naval aviation aircraft and 85 helicopters. Soviet military ships, in contrast to Western ships, do not have any ecological devices whatsoever, all garbage is thrown overboard. While at times reducing their seamen to a frenzied swabbing of the decks (so that everything on the ship sparkles!), warrant officers, captains and admirals are successfully transforming the Black Sea into a super garbage dump.

The Sevastopol Maritime Plant imeni Iron People's Commissar Sergo Ordzhonikidze surreptitiously dumped sulfuric acid into Chernaya River.

The military wharf at Nikolayev is the Plant imeni 61 Communards. They were building the beauty of the

fleet—the flag ship "Komsomolets Ukrainy" and they did not complete it. But they polluted the Inguya River with paint, diesel fuel and oil.

It even reached the famous "Kuyalnik" Resort from military unit 43032 which settled down in the village of Krasnoselok. The same thing is also occurring in Yevpatoriya, Kerch, Feodosiya, Balaklava, Kherson, Izmail, and Nikolayev—everywhere where the feet of military seamen have tread.

At the end of the 1980's, two ministers driven by Perestroyka—UkSSR State Committee for Environmental Protection Minister D. Protsenko and p73 UkSSR Ministry of Land Reclamation and Water Resources Minister V. Takach—had a minor disagreement with Black Sea Fleet Commander Admiral Khronopulo. They said, it is generous of you to permit us to take you away from important matters, highly respected comrade admiral, but could you cease dumping oil into the sea even to a slight degree? Khronopulo totally disregarded them but, they say, he ordered his adjutant to call Kiev to have the out of control ministers put in their places. What kind of environmental protection can there be when we are defending the sacred borders of our Homeland? And the ministers have resigned themselves to the fact that they will no longer dare to argue with him.

However, soon the unforgettable Dina Iosifovna Protsenko became burned out in the story with the Golo-seyevskiy Forest and Viktor Lazarevich Filonenko, who came out of the bowels of the republic agricultural industry, occupied the "sacred chair". Chubby, red-cheeked, neither more nor less than "Senor Tomato". A new broom sweeps clean and the still well-nourished minister, without alienating the bosses, decided to put the Black Sea in order. He sent one petition to Sevastopol and then another. He gave the order to his services to catch the "old salts" red-handed and to fine them. And he received a response from the admiral:

"Since 1989, the specialized inspectorate for protection of the Black Sea that is subordinate to you has begun to submit claims and suits against the fleet's fuel base and have claimed damages for petroleum product contamination of Sevastopol Bay.

"This year three suits for a sum of R85,600 have already been filed against the fuel base, of which two have been investigated by the Crimea Oblast State Board of Arbitration (R9,300) and one by the Ukrainian SSR State Board of Arbitration (R76,500).

"The next claim for a sum of R168,600 arrived in September and a claim for R250,000 is being prepared, although fuel base personnel are not guilty of petroleum product contamination of the water area and there have been no accidental spills (...)

"Considering what has been set forth above, I request that you, as chairman of the UkSSR State Environmental Protection Committee, take into account all of

the circumstances that have objectively developed and issue an order to the special inspection for the protection of the Black Sea to CEASE AND DESIST from submitting claims and suits against the fleet fuel base...

"Systematic claims for large monetary sums from the fleet for so-called violations of water legislation that objectively do not result from the fleet's activities catastrophically reduce the fleet's capability for reconstruction and construction of capital water conservation works.

"Request you inform me of your decision.

"M. Khronopulo, KPU [Ukrainian Communist Party] Central Committee Member, Admiral".

That is how he signed it, "KPU Central Committee Member," without any "with respect" there. Do you understand the slight? p73 And so that the new water conservation minister's life would not be dull, he also complained to the Council of Ministers, to Anatoliy Sergeyevich Statinov. And Viktor Lazarevich Filonenko bit his tongue and began to fear Khronopulo like the plague and diverted his energies to strengthening friendly ties with foreign countries.

Incidentally, the position responsible for the cleanliness of the sea vanished under the next Environmental Protection Minister Yuriy Nikolayevich Shcherbak. As they say, out of sight, out of mind.

But Khronopulo had just begun to ignore the ecology. Not a kopek was allocated to the environment from the R5.2 million of capital investment allotted to the Black Sea Fleet in 1990. Construction of purification plants in many bays was delayed until the year 2005. With a wave of his hand, the ruler... just ran the current military environmental protection personnel off into a corner. At one point in the old days, they would circle over the sea in an aircraft and they would spot oil slicks, but now they have closed this shop. Well Foros and other "super-secret" dacha locations are there and they don't even allow them into the air!

"That is not appropriate" and that's all there is to it. Now Khronopulo has retired and he has struck it rich in business.

March 13, 1991. A fuel oil slick was discovered in the Black Sea at coordinates 44°08"N and 34°37"E. It was obvious that a destroyer had "been washing up" again. But while they were coordinating a sortie with the military and signing a paper, the slick moved into the dacha zone where they never permit the ecologists to enter.

And right now, having taken refuge behind the thesis on the "unhealthy political situation with the fleet" and having completely closed ships off from ecological monitoring, the Sevastopol captains have obtained a unique opportunity to paint the Black Sea the color of black oil.

At the dawn of the Russian fleet, legendary Admiral Sinyavin issued a strict edict that prohibits clogging up the Don with discharges and garbage, understanding that defense cannot justify the destruction of the environment. Contemporary Black Sea imitators, while talking a lot about multiplying the Russian Navy's glorious traditions, are in fact creating something else. Tyutchev was right "An aphoristic idea is a lie".

Incidentally, the Soviet military's outrages have not only been noted in the Black Sea. An accident occurred on a Golf-II Class submarine attached to Kaliningrad Base in August 1973, as a result of which missile fuel was spilled and a nuclear torpedo was dumped into the waters of the Baltic. The Moscow branch of Greenpeace thinks that a military ship repair plant in Kaliningrad and a missile engine production plant in Riga have periodically dumped a significant amount of highly technical wastes into the Baltic Sea.

Radar Stations Impact Human Health

944K2392B Kiev ZELENYY SVIT (SPECIAL EDITION) in Russian Aug 94 p 22

[Unattributed article: "All Quiet at 'Shipka'?" special edition copy received 29 Aug 1994; published between No 9 and Nos 10-11 1994]

[FBIS Translated Text] Using the noble mission of defense of the fatherland as a cover, our military designed equipment with no concern at all for the health of nature and the people for whose sake they were supposed to be doing this.

All of the different surveillance devices and powerful radar stations are an eloquent example of this. Their continued "carefree existence" offers more proof of the authoritarian behavior and indemnity of the military and is a result of the notorious "secrecy" and of the skillful disinformation of the public. They also represent a compelling lesson for the future.

Chernobyl's "Bloodbrothers"

Experiments have shown that the radiation emitted by many radars (and the level in the West is only a fraction of what it is here) is comparable to penetrating radioactive radiation in terms of its characteristics. Its effects, like those of radioactivity, are on the cellular level. By ionizing cellular matter, it causes pathological changes and interferes with the energy and genetic properties of the cell.

Long-term radiation weakens the immune system. It is something like AIDS. Many scientific experiments have established the damaging effects of electromagnetic fields on the nervous and endocrine systems, reproductive functions, the cardiovascular system, the morphological composition of blood, and metabolism. They cause impotence in males and disturbances of the menstrual cycle in females. The data on all of this, however, have not been published widely yet.

That is why the installations above suspicion in Ukraine alone include two powerful military radars near Kiev—one in Ochakov and one in Glukhov; the "Shipka" radar station in the Transcarpathian region; the "Zvezda," a secret radar device for the surveillance of objects in space; and the powerful radar systems in Crimea and in the Sevastopol region, where the radiation is so strong that it sometimes lights neon lamps. We could add Lvov, Ivano-Frankovsk, Dnepropetrovsk, Nikolayev (Luch settlement), Yevpatoriya, Kerch, Feodosiya—on the Karadag, and Uman in Cherkassy Oblast (two stations). There is another radar station on the outskirts of the rural community of Batyatchi in Kamenko-Bugskiy Rayon in Lvov Oblast. The situation with regard to the Chernobyl-2 installation, located near the Chernobyl nuclear plant, is not clear. This is the receiver of a long-range communication system which receives and processes radar signals, topped by an antenna as high as a 32-story building. The radar stations near Truskavets and Mukachevo have not been completed.

Radar installations for ABM defense—the new generation of stations for the surveillance of objects in space and ballistic missiles—also made their appearance in other republics of the former USSR. In Russia, in Khabarovsk Kray, an offspring of the Defense Ministry code-named "Krug" has an antenna one whole kilometer in diameter. Twins of the Pestryalovskaya station in Ukraine were located in the Latvian settlement of Skrunda, in Krasnoyarsk Kray, and in Pechora Oblast, and installation No 754—the Gabelinskaya radar station—was located in Azerbaijan. The Krasnoyarsk station has already been closed. Other "brothers of Chernobyl" are still operating. This is true, for example, in the village of Trostyanets in Poltavskiy Rayon in Poltava Oblast, where schoolchildren played in the fields for years near dangerous military surveillance devices.

Chemical Weapons Program Impacts Environment *944K2392A Kiev ZELENYY SVIT (SPECIAL EDITION) in Russian Aug 94 pp 21-22*

[Unattributed article: "Bacteria Generals"; special edition copy received 29 Aug 1994; published between No 9 and Nos 10-11 1994]

[FBIS Translated Text] The Germans helped the Red Army start developing toxic substances for military operations. The German military industry, which had been prohibited since March 1921 by the Versailles Treaty, moved to the USSR. Despite the international Versailles Treaty, toxic substances for aviation and artillery were being developed near Kazan and Lipetsk and in the small town of Volsk in Samara Oblast in an atmosphere of absolute secrecy under the supervision of Lenin, Trotskiy, Frunze, Tukhachevskiy, and Stalin, and of Ludwig von Sieherer representing the Germans. This was done in spite of the fact that the 1925 Geneva protocol, which was signed by all countries, prohibited the use of chemical weapons in battle. The Society for

the Promotion of Defense, Aviation, and Chemical Development—OSOAVIAKHIM—became a convenient cover for these inhumane projects. The operations were in full swing for more than 10 years, until 1933. Costs were shared. As a result, the Red Army became one of the most advanced in the world in terms of the production of chemical substances. Incidentally, some had been "tested" successfully on the civilian population by Tukhachevskiy in 1921 during the suppression of the Antonov rebellion in Tambov Oblast.

In 1919 toxic chemical substances were used against the Don Cossacks. In 1929 when V. Primakov, the head of the Red Cossacks, was sent to Afghanistan, he insisted on the use of mustard gas. That is how the military-chemical complex came into being and then fed the sizable clan of parasites who had lost their conscience with decades of preparations for chemical warfare. During that time chemical weapons became ecological weapons.

Nothing was said about the toxic substances in military arsenals for a long time, but the truth always comes out in the end.

According to some data, a huge burial mound in Vinitsa Oblast, on the border between Shargorodskiy and Tomashpolskiy rayons, was used (with the usual carelessness and irresponsibility) for the disposal of highly toxic substances. The same kind of "chemical bomb" was concealed near St. Petersburg on the Krasnyy Bor test site. It was filled with hundreds of thousands of loads of highly toxic waste. In summer 1993 storage facilities for military chemical toxic substances were discovered in the Donbass and on the grounds of the Khimprom Production Association in Slavyansk. We can assume that the same kind of waste is buried on the grounds of the chemical combines in Lisichansk and Rubezhnyy.

We now know that military toxic substances like mustard gas were dumped in the Black Sea and off the coast of Vladivostok several times in the 1940's and in the Baltic Sea in the 1940's and 1950's by Soviet sailors.

For more than 20 years the Gorlov Chemical Plant of the military-industrial complex in the Donbass was disposing of toxic substances underground. It was built above the longwalls of the "Aleksandr-Zapad" mine. A tragic accident occurred in May 1990. Two miners were poisoned by toxic fumes, and several dozen others also suffered adverse effects. Were the numerous mysterious cases of illness among the children of Chernovtsy in summer 1988 caused, as some people have suggested, by emissions of chemical substances while a military column was passing through Chernovtsy? In summer 1993, 100 kilograms of nitric acid leaked out of a tank on the grounds of one military unit in the community of Pavlovka in Svetlovodskiy Rayon in Kirovograd Oblast. The nitric cloud started moving toward the rayon center. Preparations were made to evacuate the people, but, fortunately, the cloud dispersed.

Soviet military microbiology had been "working" hand in hand with Soviet military chemists since 1946.

All of the world's newspapers reported the disgraceful story of the Island of Vozrozhdeniye ["Rebirth"] (now known as "Vyrozhdeniye" ["Degeneration"]) in the Sea of Aral, where the field test laboratory of the USSR Defense Ministry's Scientific Research Institute of Microbiology was located. It was testing biological weapons, which had been prohibited, incidentally, by an international convention (signed by the USSR) back in 1972. The local population occasionally witnessed odd events. In 1976 the fish in the Aral were dying for no apparent reason. In 1989 a thick yellow smog rose above the cis-Aral zone. Sheep began to go bald. In 1988 half a million saiga died for unknown reasons. Bulldozers were used to bury them in a quick attempt to conceal what had happened. No one was ever punished for all of this.

This test site and others were used by the military bacteriological centers in the Moscow suburb of Obolensk, Sverdlovsk, Kirov, Sergiyev Posad, and the Novosibirsk suburb of Koltsov, by restricted institutes in Moscow and Leningrad, and by higher academic institutions in Moscow—the Moscow Higher Technical School imeni N.E. Bauman, Moscow State University, and Medical Institute No 2.

The emergency medical center in Sverdlovsk began receiving the first calls for help on 4 April 1979. They were frequent and they came from only one rayon. The symptoms were always the same—fever, coughing, and vomiting.

Soon the wards of Municipal Hospital No 24 were full, and a neighboring hospital was pressed into service. Sixty-four people died. Andropov himself made inquiries. The reason for this tragedy was not known for more than 10 years: The secret bacteriological laboratory of the 19th military settlement in the southern part of Yekaterinburg—Sverdlovsk—was developing a frightening bacteriological weapon—a pulmonary form of anthrax. There were two outbreaks in 1979, and the epidemic did not subside for two months. The first was a result of the negligence of maintenance personnel: There was too much pressure on the "jacket" of the air conditioning system, and the filter split, releasing anthrax spores. The second outbreak, which took the lives of 18 people, occurred during subsequent preventive maintenance. A thick layer of dust, posing a lethal threat, had accumulated on the roof of the shops of the ceramics plant. If people had been cautioned to wear ordinary respirators, there would have been no deaths. The chief of the 19th military settlement later committed suicide, but those who planned the construction of the lethal military laboratory in a residential area were not even demoted.

A shocking article by Moscow chemists V. Mirzoyanov and L. Fedorov, "Contaminated Policy," was printed in MOSKOVSKIYE NOVOSTI in fall 1992. Its authors were later accused of divulging state secrets. Their homes

were searched and V. Mirzoyanov was incarcerated. The scientists accused the USSR Government of lying in 1987 when it announced that the Soviet Union had stopped producing chemical weapons. They presented documented proof that the State Union Scientific Research Institute of Organic Chemistry and Technology (GSNIIOKhT) in Moscow had developed a new toxic chemical substance recently to cause a virtually incurable disease. The team of military leaders and chemists had been awarded the Lenin Prize. The substance was tested on the Ust-Yurt site near the city of Nukus in Karakalpakia. The waste was then sent to Saratov Oblast near the small community of Shikhany and dumped in pits.

Therefore, the military-industrial complex of the USSR, which had officially told the entire world that the USSR was no longer working on any bacteriological and chemical weapon development projects, was totally involved in this work, contrary to the provisions of the international convention the Soviet Union had signed in May 1972 on the prohibition of biological and toxic weapons.

Accidents occurred repeatedly in various locations of Soviet chemical weapon production. In the early 1960's and early 1980's waste from Shop No 34 of the Volgograd Khimprom plant, producing zorene and zoman, leaked into the Volga. The whole surface of the river was white with dead fish all the way to Astrakhan. A colossal fire broke out in the Novosibirsk Khimprom plant in 1974. The implications are still unknown. Another fire in the capital of the USSR, in the building of the notorious GSNIIOKhT, sent several hundred grams of highly toxic V-X into the air in 1980. Firemen tried to contain the damage. The results were never published.

Have you noticed that St. Basil's Cathedral in the capital of the former USSR is located between the Ministry of Defense and the Kremlin? This could be seen as a symbol of the country—culture and morality in the clutches of military leaders and politicians.

The next military problem is connected with our existing chemical weapons (the former USSR had more than anyone else in the world—40,000 tonnes): Where and how will we dispose of them? According to the new treaty with the Americans, virtually all of them have to be destroyed by 2002. The supply of chemical weapons in Russia is known to be concentrated on seven bases (there are no data yet on Ukraine, Belarus, Moldova, and other CIS countries).

- 6,400 tonnes of lewisite in containers in the city of Kambarka in the Udmurt Republic;
- around 1,000 tonnes of lewisite, mustard gas, and a mixture of lewisite and mustard gas in containers in the settlement of Gornyy in Saratov Oblast;
- 9,800 tonnes of phosphoro-organic toxic substances in small-caliber ammunition in the city of Shchelye in Kurgan Oblast.

Other chemical arsenals are evidently located on the test sites of Kuzminka (Moscow Oblast), the Gorokhovitskiye Camps (Nizhniy Novgorod, Vladimir, and Ivanovo oblasts), and the Transbaikalian zone, Blysk, and Chapayevsk (Samara Oblast) (according to data in TRETIY PUT).

Russia's chemical weapons are to be destroyed in the settlement of Gornyy in Saratov Oblast, the city of Kambarka in the Udmurt Republic, the city of Novocheboksarsk in the Chuvash Republic, in Volsk in Saratov Oblast, and in two other locations. Once again, all of this will be conducted in secret (in contrast to the United States), without any discussions whatsoever with the general public, and with unpredictable effects on neighboring countries.

Nuclear Weapons Inflict Ecological Damage

94WN0412B Kiev ZELENYY SVIT (Special Edition)
in Russian Aug 94 pp 15-16

[Unattributed article: "To Where Will the Cruise Missiles Fly?"; special edition received 29 Aug 94; published between No. 9 and Nos. 10-11 1994]

[FBIS Translated Text] There are no more vulnerable people than the victors. Having changed the last agreement in our favor, we were drawn into the deadly whirlpool of the arms race. To the army, we devoted the best and the dearest things—the lives of the children, natural resources, and minds, and we economized on ecology and on the health and well-being of the people. "Everything for the front, everything for victory!" And so we created—a state within the state—the Soviet Army, and we reared a wild monster: the military-industrial complex. Invulnerable to criticism, concealed from the people, and possessing omnipotent protectors.

An Atomic Bomb?—No, Thanks!

"For every important public event in the USSR," wrote Solzhenitsyn, "one of two fates has been prepared: either it will be ignored or it will be slandered." How many nuclear weapons is Ukraine holding? We did not learn this, even when it became a sovereign state. Seemingly, sovereignty does not extend to the warheads and strategic missiles and bombers hidden in our land. So it is necessary to turn to the data of the Western "intelligence services" and the "greens."

Supposedly, in the former USSR, there are 27,000 nuclear weapons, of which 12,300 are strategic ones. Of all this property, somewhere 20 percent is in our country. That is 4,000 units, including 920 strategic nuclear warheads. Ukraine has approximately 176 strategic nuclear missiles with 1,240 nuclear warheads.

The nuclear missiles are concealed in Ukraine at two sites. In the launch silos near Pervomaysk in Nikolayev Oblast, there are 460 nuclear warheads on 46 SS-24 missiles, and near Derazhnya (Khmelnitskiy Oblast). Here there are 780 nuclear warheads on 130 SS-19

missiles. An SS-24 can carry 10 nuclear warheads, while the SS-19 can carry a total of six. These are the largest missile bases in the USSR. Every fifth nuclear missile warhead of the USSR is hidden here.

It is possible that an air force nuclear weapons base was located near the restricted town of Oktyabrskoye, which is 15 kilometers from Nikolayev, and there are two strategic bomber airfields—in the area of Uzin near Belaya Tserkov and at Priluki in Chernigov Oblast.

Located at Uzin is a base of more than 20 TU-95 heavy bombers, each of which has been equipped with air-launched cruise missiles. And nearby—at Belaya Tserkov—installations for their outfitting and elimination.

Thirteen TU-160 heavy bombers, capable of carrying 12 nuclear air-launched cruise missiles each, were stationed at Priluki in 1989. This was their largest base in the USSR.

And this entire nuclear missile armada, lovingly reared in Ukraine, threatens not only the "Swede," as some of our politicians believe, but also the people and environment of Ukraine. And the whole point here is the unreliability of Soviet military (and not just military) equipment, its lack of ecological control, the general army disorder, the negligence and the thievery. Military aircraft fall from the sky no less frequently than civilian aircraft—God forbid they should have an atomic bomb on board, the submarines sink and the missiles—explode.

In the fall of 1991, due to an error by servicing personnel, a live surface-to-air missile was launched from a PVO [air defense] missile launcher in the Svetlovodsk Rayon in Kirovograd Oblast. After flying about a kilometer, it crashed at a crossroad of the road leading to Kremenchug. Several soldiers were seriously injured.

The most dangerous missiles for the population are the mobile RS-22, RS-12M, and the PS-12. Their interior is filled with a nuclear device and ordinary explosive, self-igniting, toxic and chemical substances. Ten instances of the overturning of such missiles have been recorded. There were sufficient preconditions for an explosion. On the basis of the calculations of a military expert, P.G. Belov, the probability of an accident involving an individual nuclear warhead in the CIS is now one in 100.

Incidentally, the driving of the SS-20 launchers was reminiscent of circus stunts with blindfolded eyes. They drove them at night, strictly in the middle of the road, which had a cross slope of not more than five degrees, with a wind... of not more than 25 meters per second. In the event of a "fire on the unit," it was recommended that the personnel distance themselves from it by only... 600 meters! The barbarous destruction of these missiles by blasting in Kapustin Yar inflicted enormous damage on the environment because of the acid rains and the fallout of long-lived alumina and minute particles of fiberglass.

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It is not necessary to explode a nuclear weapon in order to inflict damage on the environment. Enormous damage can be inflicted by rocket fuel, which we handle very ineptly.

A catastrophe involving the spilling of rocket fuel occurred in 1983, in February, in Vladimir Oblast, between the Krestnikovo and Saryyevo stations on the Moscow-Gorkiy Railroad. There was a collision of two freight trains, one of which derailed. People from the neighboring villages, who came to profit from scattered imported goods, suffered. We do not have an exact death toll. In 1988, military personnel overturned near the bridge across the Volga near Yaroslavl several railroad tank cars with some kind of poisonous liquid (according to some sources—rocket fuel). It was only by a miracle that it did not get into the Volga and poison every living thing for 350 kilometers. Although, however, before this, for each new military thing, even one harmful to the environment, the military personnel recommended one another for titles like "doctor," "laureate," "hero" and other "honorifics." Conversion began—they are opening "military-exchange sections" and again receiving dividends.

On 28 December 1984, during a live-firing exercise in the Barents Sea, a Soviet cruise missile did not want to hit the selected target but turned instead... toward Finland. On 11 September 1986, the USSR accidentally fired into its uneasy neighbor, China, a missile without a warhead, which was launched from a submarine near Severomorsk. At approximately this same time, another "stray" SS-8 missile was launched from a Delta-2 submarine and also flew into China in the area of Khabarovsk. God was watching over us—it turned out that there was no nuclear warhead on it.

Saddam Hussein—to Marshal Yazov: "Thanks for the 'surface-to-air' missiles zpt [comma] they are hitting the air fine tchk [period] We are waiting for the 'surface-to-aircraft' missiles." (From the secret archives of the USSR Ministry of Defense)

The Beginning of the Sixties. One of the "naughty" Soviet missiles went toward Alaska. We barely managed to shoot it down in the air. Another instance is the explosion of missiles at a military base in Alakurtti in the vicinity of the Soviet-Finnish border. According to Finnish sources—the "military atom" is indispensable here.

We were all on the brink of a colossal tragedy when, in May of 1984, a fire occurred at a strategic bomber base in the area of Bobruysk (Belarus). Depots with surface-to-air missiles rumbled, and the administrative buildings burned. And, from 1984 through 1990, there have been no fewer than six such large catastrophes at Soviet military installations!

Or take that same Derazhnya that is in Khmel'nitskiy Oblast. They brought SS-19 strategic nuclear missiles there, looked at them—and they turned out to be "premature babies." They were poorly made and hard to

guide. They could end up flying anywhere. So they began to finish them right in the silos.

Or another example. On 19 May 1992, at a military unit located in the southern part of Ulyanovsk, there occurred an accidental escape of a gaseous mixture of rocket fuel components from the fuel and lubricants depots. Fortunately for Lenin's countrymen, a strong wind quickly dissipated the poisonous cloud.

In February of 1993, the newspaper IZVESTIYA featured an article with an attention-grabbing headline: "A Second Chernobyl Is Maturing in Ukraine's Missile Silos." Specialists checked the status of the nuclear safety of the systems of the missile division in the city of Pervomaysk in Nikolayev Oblast.

It turned out that: "Here, 16 SS-24 missile launchers are on operational readiness with deadlines for the conducting of planned servicing overdue by eight to 10 months. Three more strategic missiles on operational readiness have simply been out of service over the course of two months. In this same division, the conditions for the safe storage of nuclear weapons at their storage sites have not been ensured. The number of operational units in a single location exceeds the norm by a factor of three to five. As a result, the radiation background has increased. It now amounts to almost 1,000 microroentgen per hour, which is dangerous for the lives and health of the people who service the nuclear units." (IZVESTIYA, 16 February 1993)

An anecdote comes to mind.

The Third World War. The USSR and the United States of America are bombing one another with nuclear weapons. Bush calls Gorbachev: "Misha, intelligence has reported that you have 10 missiles left. We have 20, surrender!"

"No, we are finding reserves...."

After a while, Bush calls again: "Misha, intelligence has reported that you have one missile left! We have 10, surrender!"

"No, somewhere in the tayga, we accidentally found one base of ours and there are 50 missiles there. Surrender yourself, Georgie!"

"Well, Ronnie warned me that, if the United States was fated to perish, it would only be because of Soviet mismanagement...."

And this is not all. Our missiles can simply... be stolen. Thus, the Soviet Army started to leave the land of independent Estonia, and it suddenly turned out that more than 50 missiles and eight launchers had disappeared at a Tallinn artillery base. And, tomorrow, a cruise missile or an atomic bomb may be stolen (if they have not already been swiped). And a tactical nuclear weapon may be carried out without fanfare in a diplomatic pouch. Thievery is an occurrence that is completely normal for our society. And the army is its lifeblood.

The "military atom" is an incomparable evil. On the territory of the former USSR, it is especially evil. In the United States, the nuclear bases have been deliberately situated in the Rocky Mountains, in sparsely populated sites. We, however, apparently on purpose, have crammed them into the most densely populated regions of Ukraine, Russia, Belarus, and Kazakhstan. Since these installations were built in strictest secrecy, any environmental and health standards and allowances were flouted. The Ministry of Defense did whatever it wanted.

For now, we have very little data about the impact of the military nuclear installations on the environment and on a person's health. The deep missile silos are having a very adverse effect on the level of the ground waters, and the dumping of rocket fuel may have serious consequences. And even the nuclear weapons, as Western military specialists recently ascertained at a military depot near Smolensk, are being stored in our country extremely negligently, and the environment is also being polluted due to leaks from military nuclear waste. In Hanford (USA), from 1958 through 1973, such leaks occurred 16 times. I think that we also have something "to brag about." Only, for the time being, we do not know about it.

In July of 1992, in KIYEVSKIYE VEDOMOSTI, information appeared about the fact that the radioactive background supposedly amounts to 3,000 milliroentgen at the nuclear ammunition storage sites in Ukraine. Which is possibly explained by the fact that the hydrogen absorbers that "cover" the missiles' nose sections have long since reached the end of their useful life and urgently need to be replaced.

Incidentally, the state environmental protection inspectors still do not have the right to inspect strategic nuclear installations. And I doubt that they will be admitted to them when Ukraine begins to disarm. After all, which general wants to come away with more nuclear pollution on himself.

The "Post Boxes" that are working on the "military atom" are inflicting enormous damage on the environment. In Zheltyye Vody in Dnepropetrovsk Oblast, for

example, they enrich the ore for nuclear warheads. In the district, there is an increased [radiation] background. In neighboring Pavlograd, where they make the missile engines for the SS-24s and the SS-25s, on 12 May 1988, an explosion occurred. It was "kept a secret" from the people. And what good can be expected from the Dnepropetrovsk Southern Machine Building Plant, where they are building the SS-20 intercontinental ballistic missiles? In Sarny in Rovno Oblast, there is also a secret little plant for the retooling and elimination of these same missiles. I do not think that its proximity is wholesome for the health of the local residents. After all, there are data about the serious radioactive contamination in the closed cities of Chelyabinsk-6, Arzamas-16, Krasnoyarsk-45, and Tomsk-7, there, where nuclear weapons are produced. (IZVESTIYA, 23 January 1992)

Let us finish our nuclear list. Located on the territory of the former USSR (according to the data of the English magazine THE ECONOMIST) were: 20 nuclear plants (13 in Russia, five in Ukraine, one in Kazakhstan, and one in Lithuania), three nuclear weapons plants (all in Russia—Kyshtym, Beloyarsk, and Dodonovo), nine nuclear bomber bases (five in Russia, one in Ukraine, one in Kazakhstan, and two in Belarus), five bases for nuclear submarines and ships (all in Russia—Severomorsk, Polyarnyy, Vladivostok, and Petropavlovsk-Kamchatskiy), two antiballistic nuclear missile bases (both in Russia), 17 nuclear missile bases (13 in Russia and two each in Ukraine and Kazakhstan—Derzhavinsk and Shantiztob (100 SS-20 missiles)), the cosmodromes—Baykonur in Kazakhstan and Plesetsk (Arkhangelsk Oblast) in Russia, and the Scientific Institute for Strategic Defense Research—in Kazakhstan (Saryshagan). There are missile radars—two in Belarus and one each in Ukraine, the Transcaucasus and Kazakhstan. My God, I do not know where we are going to put all this stuff!

It is also necessary to remember that strategic weapons always give rise to a state of military threat. After all, they are constantly on high alert, ready for launching, and the coordinates of the enemy's targeted installations, in this instance, those of the United States, have been entered into computers.

GERMANY

Greens Official Views Possible Red-Green Coalition AU0410082194 Vienna PROFIL in German 3 Oct 94 p 82

[Interview with Greens Executive Board member Joschka Fischer by Robert Misik; place and date not given: "The Illusions Are Gone"]

[FBIS Translated Text]

Misik: How realistic would a Red-Green alliance in Bonn be?

Fischer: Very realistic. It will be difficult for Kohl to retain a majority. The Free Democratic Party (FDP) has not been able to enter the Bundestag. Whether the Party of Democratic Socialism (PDS) will enter it depends on whether Kohl is ready to give the Social Democratic Party of Germany (SPD) the first votes of the Christian Democratic Union (CDU).

Misik: You mean that in the disputed eastern German constituencies, the CDU should call upon the electorate to vote for the SPD candidate?

Fischer: Yes. The CDU must demonstrate now whether they mean what they say in their anti-PDS campaign.

Misik: Do you not have to hope for the success of the PDS? Recent opinion polls show that the PDS will rupture the coalition's majority.

Fischer: No, the PDS will prevent a possible replacement of Kohl. We do not want to form a coalition with the PDS. As long as the continuity of the Stalinist heritage—including persons that form part of this heritage—is not definitely clarified, the PDS is not an alliance partner.

Misik: You are known as a sharp rhetorician and as Hessian environment minister. Now you have written a book that Peter Glotz has praised as "the best foreign policy book by a German politician since Helmut Schmidt's early works." Should we get used to the idea of Joschka Fischer as a statesman?

Fischer: No, but I think about things and write down what I think. The reunited Germany is looking for a new role, which is not undangerous. The Germans lack experience in dealing with power; they lacking calm self-confidence. That is why I wrote "Germany as a Risk," because I want us to avoid such risks.

Misik: Do you think that Kohl and Kinkel are pursuing a risky course?

Fischer: Kinkel is a dilettante. However, foreign policy is devised by Kohl anyway. Wolfgang Schäuble, who is the

Bundestag group leader of the Christian Democratic Union/Christian Social Union (CDU/CSU), is trying to ride the national tiger. That can easily go very wrong.

Misik: Would you like to be foreign minister?

Fischer: No. I would not at all like to be a minister. I am running for a Bundestag seat.

Misik: Anyone speaking about such dangers should wish to do better....

Fischer: We want to get as many votes as possible on 16 October and remove Kohl. This is what I talk about all day long, and this is what I dream about at night.

Misik: What would be fundamentally different in a Red-Green Germany?

Fischer: We would tackle ecological reconstruction, start relinquishing nuclear energy, concentrate on the technological breakthrough in connection with renewable energy resources, give preference to rail transport, implement an ecological tax reform, and exercise foreign policy restraint. We would ensure inner freedom, and would not just place our stakes on repression. In our policy toward foreigners, we would put an end to national isolation and make it easier for foreigners to become German citizens. I have so many ideas on this topic.

Misik: Do you intend to implement this....?

Fischer: My God, I have always been interested in politics, even when I was a boy—not in the sense of wanting to become federal chancellor, but the basic political question of how people behave toward one another? Who decides?

Misik: What is left of the ideas that you had as a youth?

Fischer: The illusions are gone. What is left is a strong democratic substance. I have noticed this with many people from that time. They have become convinced radical democrats who highly appreciate the well-tested democracy of minority protection and the rule of the law.

Misik: Is it not strange? In the sign of Marx or Mao

Fischer: And Bakunin!

Misik: ... an entire generation is seeking revolution, and in the final analysis, they all end up with the Enlightenment.

Fischer: This was already the case in previous generations; think of Manes Sperber. I think that every generation should attempt at some point to reinvent the world. This is the only way for people to really make the world their own.

Pilot Program for Biological Decontamination of Soil

94WS0522B Frankfurt/Main FRANKFURTER
ZEITUNG/BLICK DURCH DIE WIRTSCHAFT
in German 12 Sep 94 p 10

[Unattributed article: "Torque Tube Bioreactor Used in Berlin Experiment to Decontaminate Soil"]

[FBIS Translated Text] The biological decontamination of polluted soil by means of microorganisms is, from both the ecological and economic points of view, an efficient process. Unfortunately, it takes a relatively long time for a biological process to remove the harmful substances. Now, the Technical University of Berlin (Biological Processes Technology Department), together with Biotecon GmbH (Gustav Meyer Allee 25, 1000 Berlin 30), has developed a torque bioreactor for microbial soil decontamination that shortens the time required to decontaminate soil considerably.

Biotecon reports that the facility essentially consists of a horizontally placed reactor, inside of which a rigidly fixed spiral has been installed. The reactor rotates around its own axis. As it does, the spiral transports the soil forward, mixing it at the same time. It operates quite like an auger-type feeder. At the present time, a large pilot plant having a total volume of 50 cubic meters is being constructed in Berlin. About a ton of soil can pass through it in an hour. The intensive mixing of the soil accelerates the rate at which the contaminants are broken down, thereby shortening the decontamination time. In this respect, the reactor is much superior to conventional biological decontamination processes in which the soil must be lifted and stacked. Another advantage of this new process is its mobility and the fact that, owing to its container-like construction, it occupies a relatively small working space. Both of these advantages make the new process attractive for inner-city clean-up operations. The abandoned sites of former gas stations or oil storage facilities, for example, would be prime candidates.

Before entering the reactor, gross particles like stones or wood must first be removed from the soil that is to be decontaminated. The soil is then enriched with phosphate and nitrogen compounds in the mixer. The compounds are added to nourish the specialized microorganisms which have been obtained from contaminated areas and whose decomposition powers have been studied in the laboratory. The most efficient cultures, which are selected and isolated depending on the particular contaminant to be eliminated, are then introduced into the soil. The soil should have a moisture factor of about 15 percent by weight. Air conditioning is used to ventilate the reactor. The exhaust air is purified through an active charcoal or biofilter. Thus, the reactor itself is a closed system in which no harmful substances or by-products can escape. The first tests conducted in Berlin have confirmed that the new process shortens the decontamination process notably. Soil contaminated with 4,000 ppm (parts per million) of gasoline, for example, was

cleaned-up to the point where the prescribed mineral oil limits were met in 30 hours. Both bacteria and yeasts were used as the culture. A multi-stage process had to be used to decontaminate soil contaminated with 8,000 ppm gasoline. After five days of treatment in the reactor, the soil was put in temporary storage for 25 days in a mine dump. After that, the soil was reprocessed for another five days in the reactor. At this stage, the acceptable limits were reached and the decontamination process concluded. Soil contaminated with 200 milligrams of phenol per kilogram was cleansed of the harmful substance in 72 hours.

Larger torque bioreactors can also be built and used at permanent sites. Such reactors could be used for the rapid decontamination of large quantities of harmful substances.

New, More Efficient Power Plants Under Construction

94WS0503A Duesseldorf WIRTSCHAFTSWOCHE
in German 5 Aug 94 pp 79-82

[Article by Wolfgang Kempkens: "Power Plants—Magic Threshold—Natural Gas Is Economical and Pollutes the Environment Least. Will It Supplant Coal?"]

[FBIS Translated Text] To meet the biggest challenge in the world in power plant design and attain the magic threshold of 40 percent efficiency is to be crossed in a soft-coal-fired plant that is the largest of its kind in the world.

Siemens and EVT (Energie-und Verfahrenstechnik GmbH [Power and Process Engineering, Ltd.]), a Stuttgart subsidiary of the French GEC Alsthom electrical group, want to realize this feat. The partners are presently building in the Brandenburg municipality, Schwarze Pumpe, two power plant units, each of which has a capacity of 800 megawatts. These pumps are to supply, in addition to electricity, large amounts of process and heating heat for industry and households. Four worn-out power plants that emit huge amounts of dust, sulfur dioxide and other pollutants will be replaced. Besides, they use twice as much fuel as the new plants for the same power.

Other manufacturers are also able to design high-performance power plants. Two 800 megawatt soft-coal-fired units having equally high efficiency—around 42 percent—designed by ABB Kraftwerke [Power Plants] AG [Inc.] in Mannheim will be built in Boxberg in Saxony starting in 1996. Thirty-six percent has been considered a good figure up to now. Finally, MAN Energie is to design two units of this kind for Lippendorf near Leipzig.

No wonder every power plant comes to precisely the same efficiency. They work according to the same principle with so-called supercritical steam. The steam is under a pressure of 285 bars at a temperature of 560°C, around 10 percent higher than usual. The design was

thought up jointly by Veba Kraftwerke Ruhr AG and RWE [Rhineland-Westphalian Electricity Works] Energie AG.

Now RWE wants to use this technology to outdo the others. The soft-coal-fired power plant that the Essen company wants to complete in Frimmersdorf near Neuss by the year 2000 is to provide 900 megawatts. The power plant designers are following the trend. "We will contend for every percentage point in efficiency," promises Adolf Hüttel, head of the power generation division (the former Kraftwerk Union or KWU) of Siemens AG. He does not accept the objection that soft-coal-fired power plants emit the most carbon dioxide (CO₂) even at maximum efficiency. No country can afford to dispense with its own economically extractable reserves and import natural gas, for example, in grand style, he says.

In fact, gas-fueled power plants are the most environmentally compatible generators of electricity. For one thing, around twice as much carbon dioxide forms when soft coal is burned as when an amount of natural gas having the same energy content is used. For another, the efficiency of natural-gas plants is substantially higher. The latest plants attain 54 percent. Hubert Linhard, a top executive in charge of the power generation division of ABB Kraftwerke in Mannheim, is already promising 58 percent. This record figure is to be attained by means of a new gas turbine outfitted with a new kind of afterburner. Relatively moderate combustion temperatures suffice because of this trick, so that only small amounts of nitrogen oxides form.

The Jersey Central Power & Light Company in the state of New Jersey, USA, is the first customer to have ordered the new gas turbine. It will be installed in the beginning of next year. A ABB spokesperson estimates that 20 billion German marks [DM] worth of plants of this type will be ordered annually the world over. The power plant designers are finding grateful customers in the oil-producing states of the Near and Middle East. Natural gas is often yielded, in addition, when oil is extracted and this gas can hardly be put on the market economically because the amounts are relatively small. Use of this gas for the generation of electricity presents itself here.

Gas turbines can become still more economical. "The potential has been anything but exhausted," says Wolfgang Breyer, spokesperson for the power generation division of Siemens. Turbine designers, primarily French GEC Alsthom in addition to Siemens and ABB, are experimenting with new manufacturing processes for the highly stressed blades.

The technology of so-called directional solidification is especially promising. Through it, components are formed whose atoms form a flawless crystal lattice. With this design they withstand high temperatures better, such as are necessary for the further improvement of efficiency. Operating temperatures are now a maximum of

1100°C. "A 100-degree increase means an up to one-percent improvement in efficiency," says Kurt-Volker Boos, manager of the ABB research center in Heidelberg. Just as their competitors are, they are experimenting there with ceramic coatings that are to protect the metal blades from excessively high heat.

The research is also of interest to suppliers of multipurpose power plants in which hard or soft coal is converted to gas. Just a few years ago this technology was considered the non plus ultra for the conversion of coal into electricity. Disillusionment is spreading. The first European plant in Buggenum on the Maas River in the Netherlands has achieved efficiency of 43 percent. Thus it is no better than an up-to-date conventional hard-coal-fired power plant like Staudinger in Bavaria, a plant operated by Preussen Elektra [Prussia Electric]. Though the operator, Demkolec BV, believes that the efficiency can increase yet in the next generation. However, this is not conceivable without improvements in turbine technology.

Government supporters of research in Germany, the USA and Japan look at it the same way. The Federal Ministry for Research and Technology, for example, has provided around DM50 million for the high-temperature gas turbine program. Industry and research facilities have put out approximately the same amount on this.

Japanese research teams that are working on CO₂ catalysts promise a quantum leap in the reduction of carbon dioxide emissions. The first results are encouraging, apart from the high cost. For instance, scientists at the National Institute of Materials and Research in Tsukuba have developed a catalyst based on ordinary materials like copper, zinc, iron and potash that brings about the conversion of a mixture of hydrogen and CO₂ into ethanol.

Ethanol is used as a solvent, added to cosmetics and alcoholic drinks, and can even be used as a substitute for gasoline. The future could belong to a power plant having a refinery connected to it.

Project to Produce Hydrogen From Garbage Using Bacteria

94WS0503B Duesseldorf WIRTSCHAFTSWOCHE
in German 5 Aug 94 p 86

[Article entitled: "From Garbage to Hydrogen"]

[FBIS Translated Text] Biologists Monika Kern and Werner Klipp at the department of genetics at Bielefeld University are pursuing an ambitious project. They want to make hydrogen that can be used as a more environmentally friendly fuel from biological waste.

The process involves so-called purple bacteria added to the waste. These bacteria are able to decompose organic compounds into hydrogen and carbon dioxide (CO₂) that the plants previously drew from the air. The process is thus CO₂-neutral.

The problem is only small amounts of hydrogen form in this reaction. Now the two researchers have successfully manipulated the bacteria's genetic material for the purpose of increasing the hydrogen yield. The altered purple bacteria convert 4.5 grams of lactic acid to 6.8 liters of hydrogen. The productivity of the original microorganisms is modest by comparison: They produce a maximum of 2.4 liters.

Production 2000 Project for Environmental Protection Technology

94WS0505C Duesseldorf *HANDELSBLATT* in German
25 Aug 94 p 3

[Unattributed article: "Capability for Recycling To Be Taken Into Account"]

[FBIS Translated Text] The Federal Ministry of Research in Bonn yesterday introduced the first project of the "Production 2000" program. The definition phase of the project, which will run to the middle of 1995, will be supported by the Federal Ministry of Research with about 15 million DM. The participants are well-known industrial enterprises, among them the large German automobile manufacturers.

Production and products must become more environmentally friendly than previously, explained Federal Minister of Research Paul Krueger (Christian Democratic Union) a few weeks ago at the time of introduction of the "Production 2000" concept. The "throw-away society" must be strengthened to a "value retention society." In the future, development of products, in addition to function and cost the capability for recycling also must be taken into account.

One of the research fields introduced yesterday relates to so-called "dry processing." A consequent step to a cost-favorable and environmentally friendly production technology ought to be the complete abandonment of cooling lubricants—accordingly dry processing—for the greatest possible number of finished materials. Every year more than a million tons of cooling lubricants fall in the federal republic.

Accordingly, yesterday the competent ministerial councillor in the Ministry of Research, Bertuleit, stated that a dry processing technology must be developed which would apply to the most important work materials and manufacturing methods in machine building. For attaining the goal six well-known companies in the machine building and automobile manufacturing industries have gotten together and they will assume more than half the project costs.

A further research field within the framework of the "Production 2000" project pertains to the cycling business. The work is to be concentrated on the one hand on using compacted materials from one-time use products involving application of an automatic dismantling and sorting technology. At the same time systematic selection criteria must be worked out for compacted materials

from the ecological point of view. The project will be carried out in the example of medical technology—perhaps with injection needles, whose hygienic and safety requirements hinder manual processing and which at present must be handled as special refuse.

A further project has the objective of shortening the total processing chain for the manufacture of cast rotating construction parts. Under the leadership of Audi and with the participation of other large auto manufacturers, in the example of cast crankshafts, manufacturing will be developed from the casting process to the final removal of the finished construction part.

Recycled Plastic Used as Raw Material for Blast Furnaces

94WN0398E Duesseldorf *VDI NACHRICHTEN*
in German 19 Aug 94

[Article by Rainer Antkowiak: "DSD Plastic Replaces Heavy Oil in Blast Furnaces"]

[FBIS Translated Text] Can you produce pig iron with waste plastic? "Yes, you can," responds Klaus Hilker, head of the Bremen Kloeckner works. Engineers at his company were able to prove in a process, for which they have applied for a patent, that a plastic granulate can be substituted "without any detriment to the environment" for heavy oil injected into a blast furnace.

And a very particular granulate at that: finely cut up plastic fragments are "baked" between rotating disks to a maximum size of 5 mm by friction heat. The need for this raw material would be tremendous if Kloeckner were to substitute it for large amounts of its heavy oil. According to Hilker, all of the packaging waste collected in yellow sacks in Northern Germany could be used in the blast furnaces of the Kloeckner works.

Important feeding materials in blast furnaces are ores, fluxes and coke. Coke serves as a fuel and chemical reducing agent: it converts the iron oxides in the ores into metals. To reduce the portion of coke necessary, additional carbon carriers are injected into the blast furnace. A whole range of organic materials is suitable for this purpose: natural gas, coal, oil or even plastics.

The plastic material used at Kloeckner in the form of DSD [Dual System Germany] mixed fraction is blown into the 2,150°C hot combustion chamber by a pressure vessel with 4 to 5 bar via a specially designed lance. In addition, large amounts of air preheated to 1,300°C are forced into the combustion chamber. The hot blast of air gasifies the reducing agent, the gas essentially reduces the iron oxide of the blast furnace furnishing.

Since the beginning of February, up to 20 metric tons of plastic granulate are injected daily as a substitute for heavy oil in a 1:1 ratio via one of the 32 blast pipes of a Bremen Kloeckner blast furnace. The authorities had made extensive testing programs a condition from the outset. "Today we can say with certainty," Joachim

Janz, Director of the Department of Blast Furnace Process Technology, summarizes the results of the testing program, "that our blast furnace, whether it is run only with oil or also with plastic feed, is always free of dioxins."

That is due not only to the high temperatures in the combustion chamber but also to the highly reduced and thus oxygen-free conditions in the entire blast furnace. These conditions essentially do not allow dioxins and furans to be formed, since the formation of dioxin and furan always requires oxygen. The test results are, according to Janz, far below the legal dioxin limit for waste incineration plants, which is set by the Federal Emissions Protection Law at 0.1 ng/m³ of exhaust air.

At Kloeckner the economic value of recycling plastic is considered a big plus. Hilker: "We are calculating investments of less than 200 German marks per metric ton for injecting plastic into the blast furnaces." Such costs are so low as to be without competition. Added to this would be annual savings "somewhere in the double digit millions" from lower oil bills.

Oil feed will not be completely dispensed with at Kloeckner. The next level of operation—the expansion approval is expected in August—envisions eight out of 32 blast pipes charged with plastic granulate. The remaining 24 will continue to inject oil. "That means then," Janz calculates, "that 200 metric tons per day or 70,000 metric tons per year will be processed." There are plans, however, Hilker adds, to re-start operation in Bremen of two blast furnaces [which are currently] shut down. This could raise the annual requirement of plastic waste material to 100,000 metric tons.

EU Environmental Policy Said Poised on Edge of Missteps

94WN0398D Duesseldorf VDI NACHRICHTEN
in German 19 Aug 94

[Article by Birgitt Riese: "European Environmental Policy In Retreat"]

[FBIS Translated Text] *Strict limits are increasingly difficult to push through in deliberations.*

The realization of the free domestic market, the political changes in the East Block countries and the economic crisis are undermining the progress which has been made so far in environmental policy in Europe. Instead of further developing what has already been achieved and introducing additional reforms, the EU is now running the danger of setting the wrong course in environmental policy.

At the conclusion of the EEC Treaty in 1957, environmental protection was still not a topic in Europe and did not become one even when it was included in the treaty as a joint task [of the Community]. With the first action program, in effect from 1973 to 1976, the central goals for a European environmental policy were laid down.

But not until 1987, when the "Single European Act" took effect, did environmental policy find a place in the EEC Treaty. By today, the EU Commission has worked out nearly 200 environmental guidelines such as environmental impact assessment guidelines, drinking water standards and waste gas guidelines. In the meantime, the fifth environmental action program was adopted in February of 1993.

Since 1992, however, European environmental policy has been eroding. This was at least the tone of an event put on by the research institute of the GSF [Company for Radiological and Environmental Research] recently in Frankfurt. "After the Danes rejected the Treaty of Maastricht, a full-blown crisis began in the Community," Christian Hey, co-founder of the Institute for Regional Studies in Europe (EURES) explained. Environmental Commissioner Carlo Ripa di Meana's resignation in 1992 after his attempt to introduce a European energy tax foundered marked a turning point, according to Hey. "Since then, environmental policy has been under very heavy attack." Reform projects were put on ice or watered down to the point of unrecognizability, existing laws were called into question.

Thus, acceding to the wishes of the French and British governments, the guidelines for the protection of surface water were amended in June. Accordingly, these now establish the tolerance limits for pesticides in drinking water, which currently are at 0.1 ng per liter and active substance, as only a voluntary goal and no longer a requirement. The bird protection guidelines, which stand in the way particularly of road construction, are to be weakened as well. According to Hey, the goals negotiated up to now on air pollution prevention are coming under special attack from the planned EU guidelines on "Integrated Avoidance and Reduction of Environmental Contamination." Namely, they make it permissible in areas which are still relatively clean for emissions limits to be exceeded.

The packaging guidelines make it especially clear how difficult it is to reach a consensus within the EU with regard to environmental policy measures. Quotas of 90 percent [reuse of packaging waste [to be met] within ten years were still envisioned in the Commission's proposal of July 1992. The Joint Position of March 1994, however, imposes re-use quotas of at least 25 percent but at most 30 percent. But even this proposal foundered in the Council of Ministers. "The low recycling quota is a setback against too much environmental protection," as Hey interprets the battle for a joint policy on waste.

One cause for the waning interest in European environmental protection, in the view of many experts, can be found in the strained economic situation. The developments in the former East Block countries, however, also hinder effective European environmental protection. The considerable environmental contamination in Eastern Europe allows the countries of the West to look like an ecological paradise [by comparison] and makes

the need for clear, additional action superfluous. "With the problems coming to light in these countries, discussion on reforming the market economy into an ecologically and socially compatible variant has nearly been silenced," in the assessment of Wolfgang Fremuth from the European Natural Heritage Foundation in Rheinbach.

Actually, however, the ecological effects of the planned economy are limited to [certain] regions, and in large sections of Eastern Europe nature is still essentially intact. With the opening of the borders, however, not only did the market economy come East but so did a number of problems: soaring numbers of vehicles, increasing tourism, growing piles of garbage, pollutant emissions—where before there were none.

Traffic is also the main source of pollution throughout the EU. Eastern as well as the Western European countries have to reckon with increasing traffic, especially from road transport of goods since the establishment of the domestic market. According to a report from the German Institute for Economic Research (DIW) in Berlin, if the previous traffic policy is continued, mileage of the long-distance transport of goods will double, carbon dioxide emissions will increase 52 percent, and nitrogen oxide emissions will rise by 14 percent. To curtail this development, freight traffic must be made more expensive. "We already asked for a heavy load tax on trucks in 1989," said Hinrich Kaehlert from the German Motor Club (VCD) in Bonn. Truck owners must shoulder the environmental costs generated by truck traffic, which are significantly greater than the prices paid today for transport. This cost increase would shift a portion of the shipments over to rail [transport], pointless hauls would be avoided and the remainder would be more efficiently run.

However, the European Union actually wants to further expand the highways. Four hundred billion Ecu are provided for this purpose up to the year 2010. "It appears as if the EU traffic policy still sees itself in the service of a strategy for economic growth within the framework of the domestic market," explains Kaehlert.

The EU agrarian policy has also developed in a way which is similarly hostile to the environment. "Revenue was in fact able to be increased by 50 percent since the founding of the EEC, but at the same time the use of fertilizers grew by 400 percent, energy consumption by 300 percent and the application of pesticides by 900 percent," Christian Ganzert from the Institute for European Environmental Policy (IEUP) in Bonn calculates. Agriculture today is responsible for 40 to 50 percent of nitrous oxide emissions. In order to establish in the EU a type of agriculture which is kind to the environment, forms of production such as ecofarming, for example, would have to be supported and polluting procedures made more expensive. Ganzert: "We are, however, far from reaching a European consensus on the [issue] at this point."

Photo Caption

1. p. 16: How much trash can be recycled? For more than two years, the EU countries have been arguing over concrete quotas for the packaging guidelines—no agreement is in sight. Photo: Siefert.

Standards for Waste Dump Clean Up Delayed

94WN0398B Duesseldorf VDI NACHRICHTEN
in German No 33, 19 Aug 94

[Article by Manfred Ronzheimer: "Industry Must Continue to Wait for Cleanup Standards"]

[FBIS Translated Text] "General financing proviso" from the Finance Minister puts a brake on federal soil protection law.

Although environmental experts have long counseled [the need for it] and industry has long expected it, the soil protection law announced by Minister for the Environment Klaus Toepfer will probably not materialize during this legislative session. This means an additional delay particularly for the new federal states in the cleanup of pollution [from the time prior to re-unification].

In contrast to the environmental arenas of water and air, a comprehensive legal set of rules for protecting the soil in Germany has yet to make an appearance. "Until the 80's the view prevailed that soil protection was up to the states," Gunther Bachmann, Director of Soil Quality Goals in Berlin's Federal Environmental Agency (UBA), explains. Then the first large-scale projects for cleaning up contaminated locations showed that the states were overburdened. In 1988 they called on the federal government to create a federal soil protection law which would unify the manner in which the soil was dealt with and treated. It was already clear at the time that cleaning up old contamination and pollution deserved an important status. With reunification and the task of cleaning up extensive polluted areas in the new federal states, plans for the law took on a new urgency.

Industry also strongly favors national, unified rules for dealing with pollution [which occurred when the country was still divided]. "An effective as well as pragmatic instrument is needed which provides legal certainty with regard to use of the soil," according to Lutz Knabe from the environmental division of the Federal Association of German Industry (BDI) in Cologne. For companies it is important to have unified standards provided for sampling and soil analyses.

According to Knabe, there also should no longer be differing regulations in the individual federal states concerning the evaluation of risks and dangers from soil contamination. "Currently the investigation, evaluation and cleanup of soil pollution is being carried out in conjunction with numerous lists of pollutant concentrations," the BDI environmental expert explains. "The proliferation of these lists creates uncertainty and in many cases increases the costs of cleaning up landsites."

The [German] government should become more involved with soil protection on the international level as well. This is what the government appointed "Scientific Advisory Council for Global Environmental Changes" demanded in its most recent annual report, which focused on the danger to the soil. In the meantime, as the 12 scientists establish in their report, the functional utility of almost 15 percent of useable soil worldwide is being greatly diminished or even totally destroyed by human activity. "The soil comprises an essential and until now too much ignored basis of life for humans," they emphasize. Developments of recent decades must increasingly give cause for concern: "Many local processes mount up to an environmental trend which must be urgently countered with political measures." The scientists thus speak out with their proposals for, among other things, the adoption of a world-wide "soil convention" at the UN level.

Soil Polluters in the Cross Hairs

Federal Minister for the Environment Klaus Toepfer had such points in mind when he presented the draft of a soil protection law in October 1993 which was supposed to set standards for the reduction of pollutant input, for environmentally compatible use [of the soil] and for cleanup of pollution caused prior to reunification. The most important corner stones of the law are: soil polluters are obligated to take measures to protect against dangers [from pollution]; property owners must see to it that storage basins or cisterns and conduits on their land and soil do not leak; pre-reunification pollution posing a hazard to humans and the environment must be eliminated. "The soil protection law is a new type of environmental law," the Minister announced proudly. It does not create any new permit procedures but rather integrates soil protection into existing procedures and thus avoids bureaucratic obstacles.

However, the bureaucratic obstacles were indeed too great for legislative procedures to be concluded yet in this session of the legislature. "We are just about to complete the departmental agreement," as Sibylle Quen-net, spokesperson for the Federal Ministry of the Environment, comments when questioned. But she too considers it "not very likely" that Parliament will make a decision before the federal election.

Objections from the Minister of Agriculture constituted one of the significant hurdles. As a result, a fund of 50 million German marks is to be set up for possible cases of compensation in which farmers can no longer use their land because of elevated levels of pollution—caused by such things as fertilizing with contaminated sludge. Bonn's Agricultural Minister indicated his agreement with this [plan].

In contrast, proving to be insurmountable was the "general financing proviso" from Finance Minister Theo Waigel, who withheld his approval of the draft in February. "We don't know the reasons for it either," said

UBA expert Bachmann. Even intervention by the Trust Agency and the BDI with the Federal Chancellor did not succeed in bringing Waigel around.

Bachmann looks at the recent delay with mixed emotions. "The better such a law is, the easier it will be later on to make it also the responsibility of private enterprise to carry it out," according to his theory. On the other hand, it is the public side which has the greatest interest in finding reliable legal foundations quickly. Bachmann gives one example. "Over the next ten years the Federal Finance Minister will make 17 billion German marks available for the cleanup of pollution existing from before reunification and of [damaged] areas resulting from brown coal open pit mining in the new federal states." This requires the clear determination of what [kinds of] pollution need to be cleaned up, what the exact goals of the cleanup are and which methods should be employed.

While the legislative session is coming to an end in Bonn, the soil experts at Berlin's UBA are working on another draft of the federal soil protection law which, according to Bachmann, "is somewhat better than the previous one" and which should regulate, among other things, the application of secondary raw materials to the soil—things such as the widely varying types of sludge from factories and industrial processes. Details should be presented in September. In any case, one thing is certain for the UBA bureaucrats: the soil protection law will be one of the first jobs which must be tackled by the next administration's future Minister for the Environment.

EU Commission Calls for 30 Percent Reduction in Fuel Use

94WN0398A Duesseldorf VDI NACHRICHTEN
in German 19 Aug 94

[Article by c.f.: "Fuel Consumption Should Drop 30 Percent"]

[FBIS Translated Text] *Commission of inquiry calls for the reduction of gas emissions from transportation and agriculture which affect the climate—no general speed limit.*

Transportation, agriculture and the continuing overuse of the forests contribute to global warming through the release of pollutants. A package of measures aimed at reducing emissions of carbon dioxide (CO₂), hydrocarbons, sulfur compounds and nitrogen compounds was drawn up by Parliament's commission of inquiry for the "Protection of the Earth's Atmosphere" in their interim report presented last week in Bonn.

Recommendations to the transportation industry include ten proposals. The most effective [measure] for reducing CO₂ [emissions] would, in the assessment of the commission, be a decrease in fuel consumption by motor vehicles. CO₂ emissions could be lowered by 12 percent to 15 percent if motor vehicles used at least 30 percent less gas than today. The commission called on European auto makers to voluntarily develop and sell

such cars by the year 2005. Expanding management systems for optimizing traffic would also have a significant effect with a maximum potential for CO₂ reduction of up to 10 percent. "[A part of this is] the introduction of speed limits which are more appropriate to the situation, more related to [the level of] pollution, more flexible in terms of time and place," commission chairman Dr. Klaus Lippold explained at the presentation of the report. The majority of the commission, however, rejects universal speed limits. A prohibition against driving private cars in congested areas could save an additional 4 to 12 percent in CO₂ [emissions]. To get car drivers to change over to public transportation, the commission recommends optimal coordination between public and private transportation as well as the creation of "time and cost optimized connections."

Recommendations for a transportation policy led to fierce front-line disagreements within the commission. While members of the FPD [Freedom Party of Germany] and the CDU [Christian Democratic Union] demanded first and foremost a hastened expansion of the road and rail network, the SPD [Social Democratic Party of Germany] commission members backed an increase in the price of fuel and a national speed limit on the roads as well as in the air: civilian jets should not be permitted to travel faster than 500 km/h.

The factions were to a large degree in agreement over recommendations for reducing agricultural emissions which have an affect on the climate. Foremost among the demands are an environmentally acceptable management of the land, the reduction of excesses of liquid manure through the decrease in animal stocks and a substantially greater support of ecological[ly sound] farming [methods]. The main goal in the area of agriculture, according to the commission, must be a lowering of nitrogen emissions. To this end the commission recommends the introduction of a nitrogen tax which, in the view of the SPD, should climb by the year 2000 to 5 German marks per kilogram of discharged nitrogen. In addition, the commission is calling for the adoption of the long heralded fertilizer regulations. Rigorous implementation of all 16 measures, according to Lippold, could cut greenhouse emissions from national and European agriculture in half. Currently, the agrarian sector contributes around 15 percent of the climate-affecting gasses worldwide.

SWEDEN

Progress in Meeting UN Climate Requirements Viewed

94P21195A Stockholm DAGENS NYHETER in Swedish 5 Sep 94 p 9

[Article by Gosta Karlsson: "Sweden Meets UN Environmental Requirements"]

[FBIS Translated Text] The tax on carbon dioxide emissions, subsidies for fossil fuels, and energy conservation will reduce Swedish emissions of carbon dioxide by 10 million tons by the turn of the century. Therefore,

Sweden will fulfill a part of its international obligations for the environment—to stabilize its emission of "the greenhouse gas" carbon dioxide at the 1990 level. The current regulations, however, are not sufficient for Sweden to meet the rest of the requirements in the UN convention on measures to combat man-made climate changes, the so-called greenhouse effect.

This is presented in a report given to the government on Thursday [1 September] by the Nature Board, the Business and Technical Development Board, and the climate committee. They reviewed the effects of what has been done nationally to halt the increase in carbon dioxide in the atmosphere and the prognoses for emissions of greenhouse gases until the year 2005. Similar reports are being prepared now in all 70 countries that signed the UN climate convention.

Sweden reported emissions of 61 million tons of carbon dioxide for 1990. This is about one-half of 1 percent of the annual global emissions. By the year 2000, according to the report, Sweden will contribute with 64 million tons of carbon dioxide. The fact that one can still speak of achieving the "stabilization goal" is due to the fact that 1990 was an unusual year in Sweden for heat and precipitation. In a normal year, the emissions figure is precisely 64 million tons.

Without the carbon dioxide emissions tax, the energy conservation program, and subsidies for fossil fuel, carbon dioxide emissions would reach 74 million tons by the year 2000. The tax is now 8.32 ore per kilogram of carbon dioxide for industry and 32.28 ore per kilogram for all other energy users.

UNITED KINGDOM

Pollution Head Announces Review of Toxic Waste Limits

MS3009121794 London THE DAILY TELEGRAPH in English 30 Sep 94 p 29

[Report by Charles Clover: "Pollution Limits Reviewed After Alert Over Dioxins"]

[FBIS Transcribed Text] Pollution limits for toxic waste and municipal incinerators, cement kilns and many industrial processes are being reviewed urgently in the light of new evidence about the health effects of dioxins, the pollution inspectorate said yesterday.

Dr David Slater, chief inspector, announced the review after a massive health study of the effects of dioxins by the United States environmental protection agency found that minute levels of dioxins can cause cancer, lower children's IQ, reduce sperm counts and affect the immune system.

"We are reviewing all the levels from any process," said Dr Slater. "It is being looked at urgently and seriously."

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Officials at yesterday's launch of the Pollution Inspectorate's annual report said the European Union was already talking about the possibility of lowering the limit for dioxins tenfold.

The present pollution limit for dioxins is already set extremely low at one nanogramme—a thousand millionth of a gramme—per metre cubed of air. Dr Slater said present limits were almost certainly sufficient to protect people from the most serious health effects of dioxin but "very low" levels of dioxins had been shown to affect the immune system and pollution levels might have to be reduced to take it into account.

Dioxins are a family of highly toxic chemicals which are formed whenever chlorine compounds are burned. Dioxins can enter the food chain through trace quantities falling on grass and being eaten by farm animals which accumulate them in their fat.

The announcement is likely to have major financial implications for incinerator companies, cement firms who plan to burn waste-derived fuel, hospital incinerators and crematoria.

It is likely to blight Government plans to build more incinerators to recover energy from domestic rubbish.

Dr Slater defended the controversial new process of burning fuels derived from hazardous waste in cement kilns which has worried many communities near cement works around the country, particularly since the American report.

He said it could be argued that it was the best method of getting rid of wastes of this kind—solvents, inks and oils—since cement kilns burned the waste at over 1,000° C for at least six seconds, whereas the legal minimum for waste incinerators was two seconds at 850 C.

So far, the results of monitoring those sites which are conducting test burns had shown that the emissions were cleaner than when the plants burned more coal. He said the waste and cement became locked together in the burning process.

This, however, does raise further questions about the process.

Some American local authorities have boycotted the products of certain cement firms, believing their use in water pipes could allow contaminants to escape into drinking water.

Dr Slater said: "We don't have any responsibility for product liability. If you want to make garden gnomes out of waste, you can."

He said hazardous wastes approved for burning were more limited than in the United States where all sorts of toxic waste have been burned in cement kilns by companies which have diversified into the toxic waste business.

The Pollution Inspectorate's report shows that it prosecuted 12 companies last year, the same as the year before, and issued 56 formal notices for cleaning up processes.

Inspectors, however, made only 2,480 site visits against a target of 6,000.

Dr Slater said his inspectorate "could be doing better" but it was competing for scarce resources at a time of Government spending limits.

Complaints about industrial processes increased by 60 per cent to 524, which Dr Slater said was a welcome result of the inspectorate's higher profile.

Study Dismisses Power Line Link to Cancer

94WN0418A London THE DAILY TELEGRAPH
in English 26 Aug 94 p 8

[Article by David Fletcher, health services correspondent: "Power Line Cancer Link Dismissed by Study"]

[FBIS Transcribed Text] Claims that electromagnetic radiation from power cables or electric appliances can cause cancer were dismissed by the Institution of Electrical Engineers yesterday.

After a two-year study, the institution found there was no clear evidence to link electromagnetic fields with an increased cancer risk.

The investigation was based on an analysis of 245 separate studies on electromagnetic fields.

It said: "None of the studies surveyed showed firm evidence of biological effects of low-level, low-frequency electromagnetic fields or identified any plausible mechanism to explain such effects.

"The few replications that have been attempted have failed to confirm the original finds and merely indicate the fragile nature of the existing literature.

"The assumption of the popular press that electromagnetic fields are bad for you stems from inconsistent epidemiological studies, unsupported by any well accepted and replicated experiments."

The investigation's findings will prove a setback for families bringing actions against electricity companies.

The families had been encouraged by a National Radiological Protection Board report which said there was evidence from Scandinavian studies of a possible link with childhood leukaemia.

The institution's report, however, said that a Swedish study had failed to take into account the length of time cancer sufferers lived near electric power lines.

"It is also interesting that, although the consumption of electricity in Denmark has increased 30-fold since 1945, the incidence rates of all childhood cancer, including leukaemia, have not changed significantly," it said.

Dr Tony Barker, a consultant medical physicist who chaired the inquiry, said that establishing an association between electromagnetic fields and cancer did not prove that one caused the other.

He said: "Much of the concern has resulted from epidemiological studies which may establish such an association but are not supported by any well-accepted and replicated experiments."

Mr Martyn Day, a London solicitor representing 10 families whose children suffer from cancer which they blame on power cables, said the report did not end the controversy.

"We accept that evidence has not reached the stage of scientific proof, but we believe it is strong enough, on the balance of probabilities, to justify a moratorium on building new houses near power lines."

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